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(54) **METHOD AND SYSTEM FOR SHARING AND NETWORKING IN LEARNING SYSTEMS**

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Publication Classification

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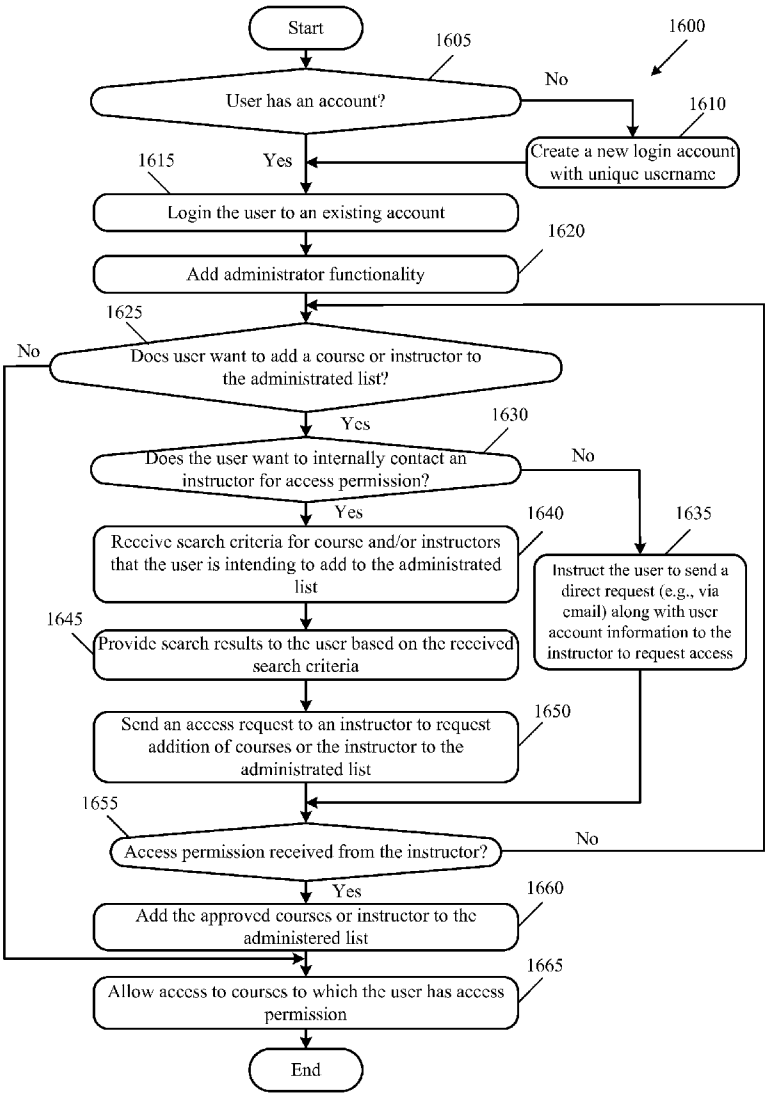
G09B 3/00 (2006.01)

(52) **U.S. Cl.** **434/350**

(57) **ABSTRACT**

Online course and learning material management system and methods are provided where students, instructors, publishers, administrators, publishers, software vendors, and industry partners utilize the disclosed systems' databases and networking features to interact, to network, to improve learning outcome, and to exchange information elements. The system furthermore allows for networking among different user categories based on users' roles, professional profiles, and professional interests.



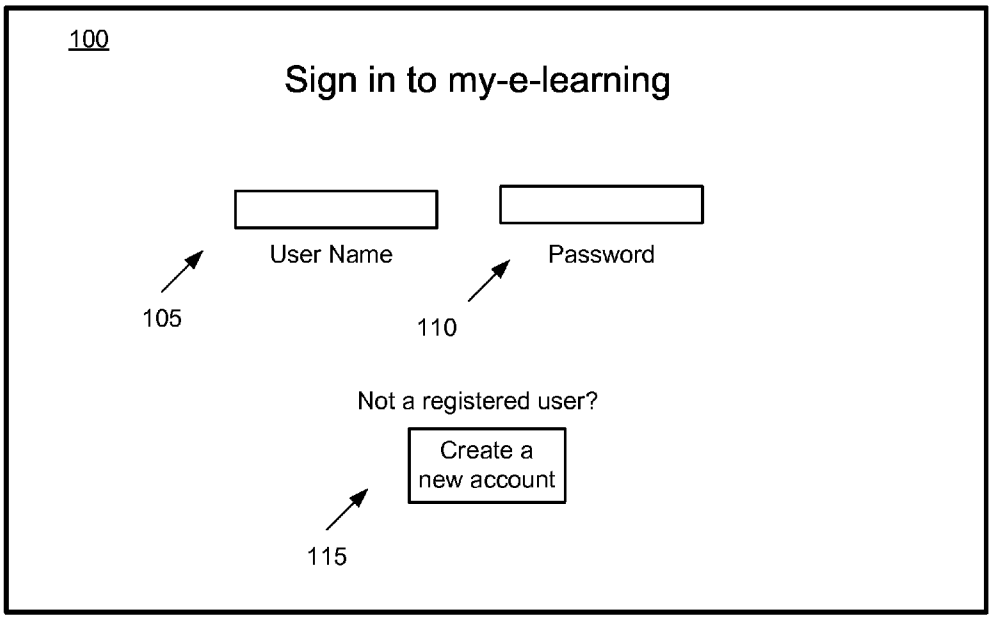


Figure 1

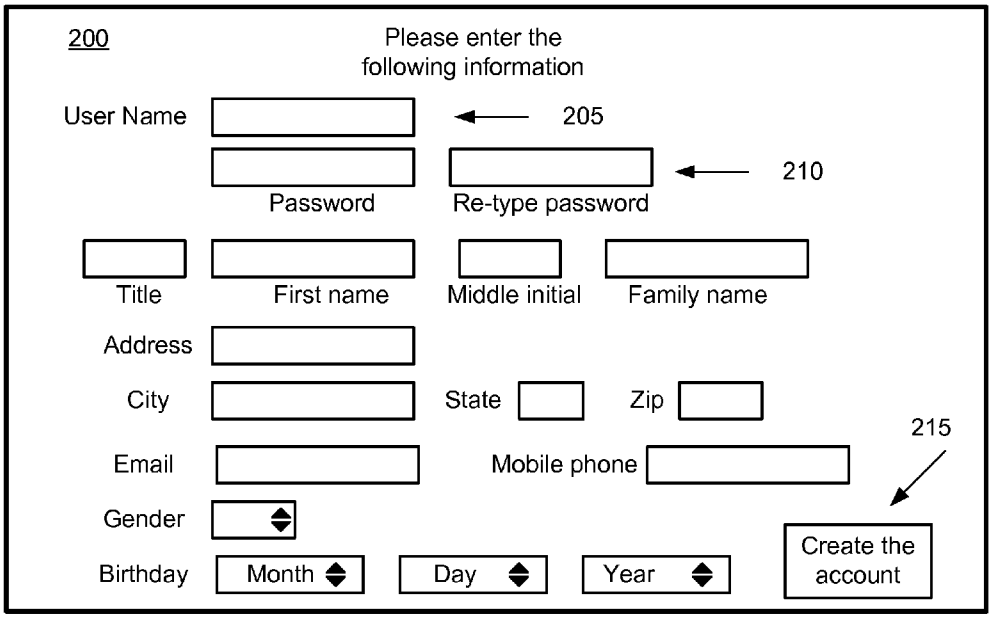


Figure 2

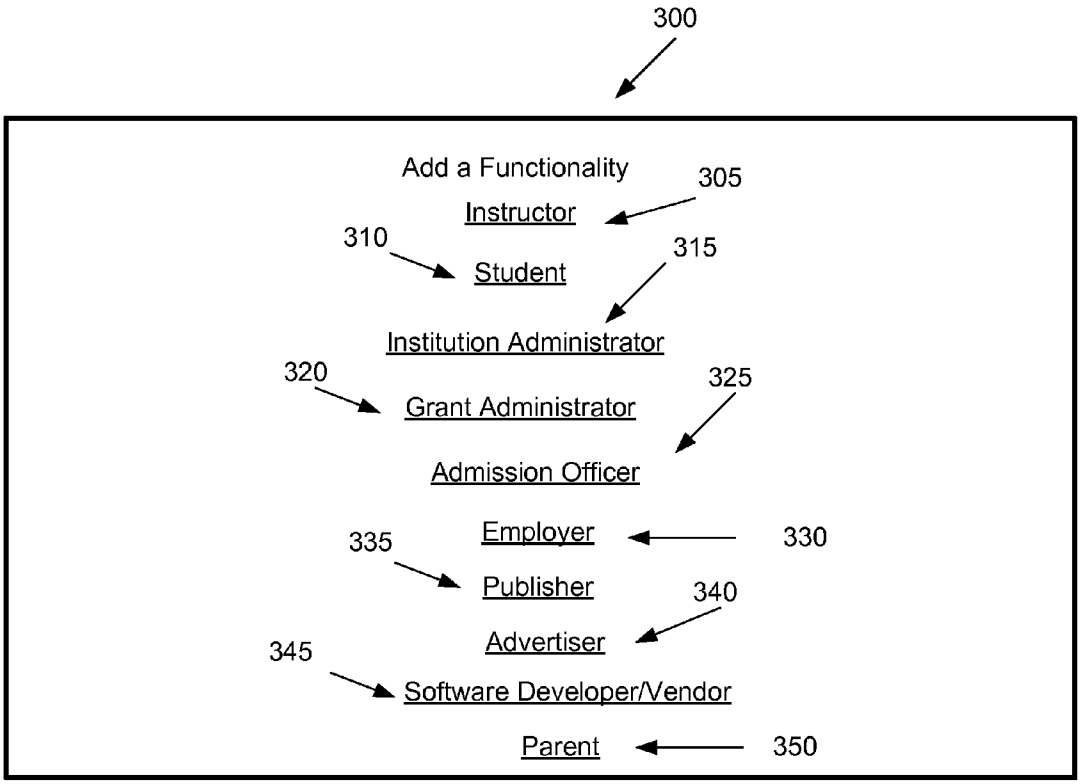

300
Add a Functionality
305
Instructor
310
Student
315
Institution Administrator
320
Grant Administrator
325
Admission Officer
Employer
330
335
Publisher
340
Advertiser
345
Software Developer/Vendor
Parent
350

Figure 3

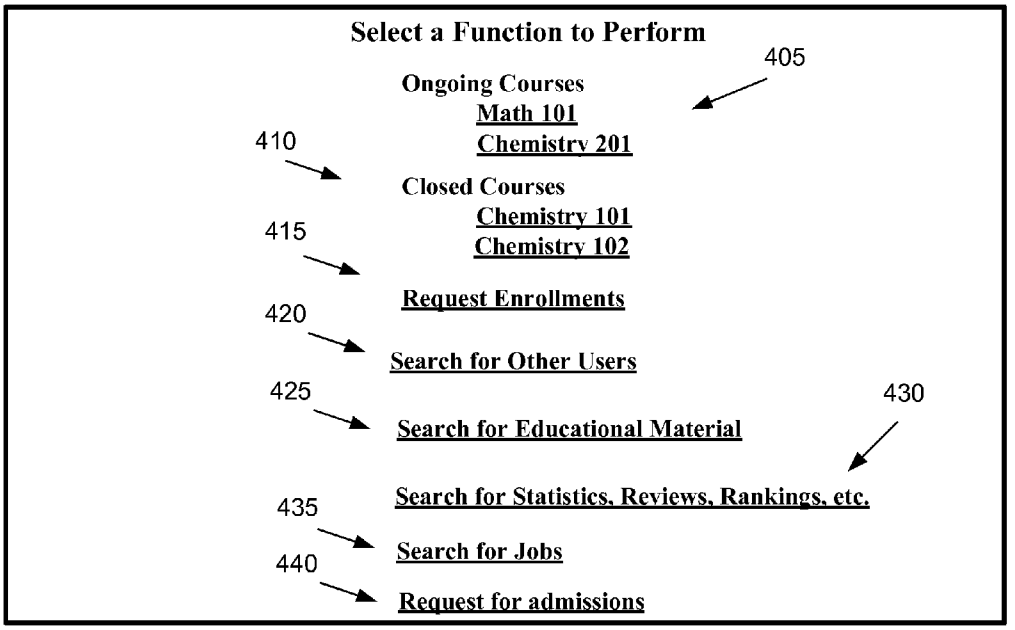


Figure 4

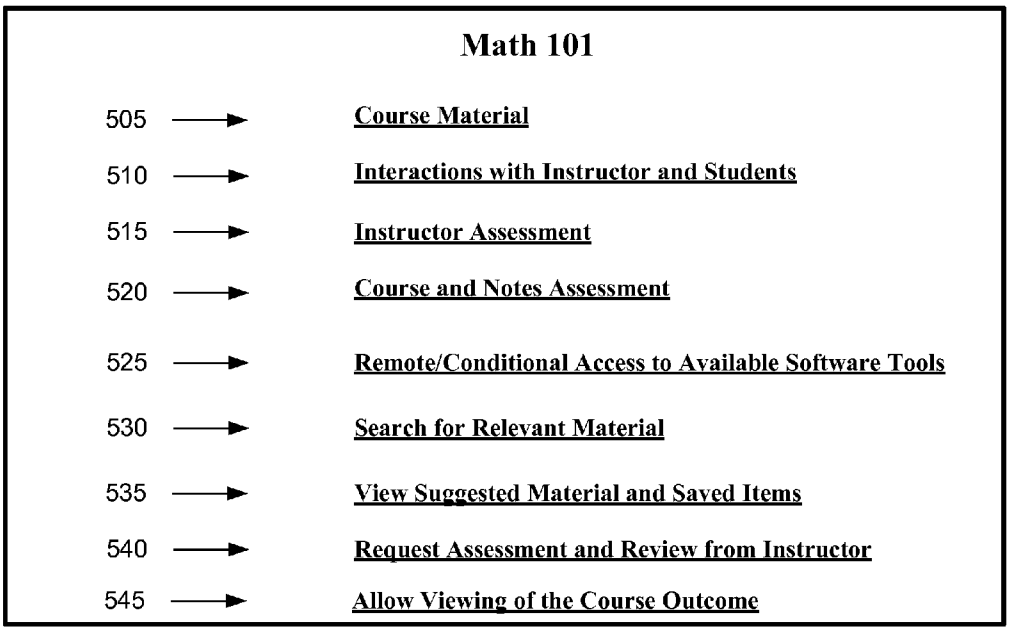


Figure 5

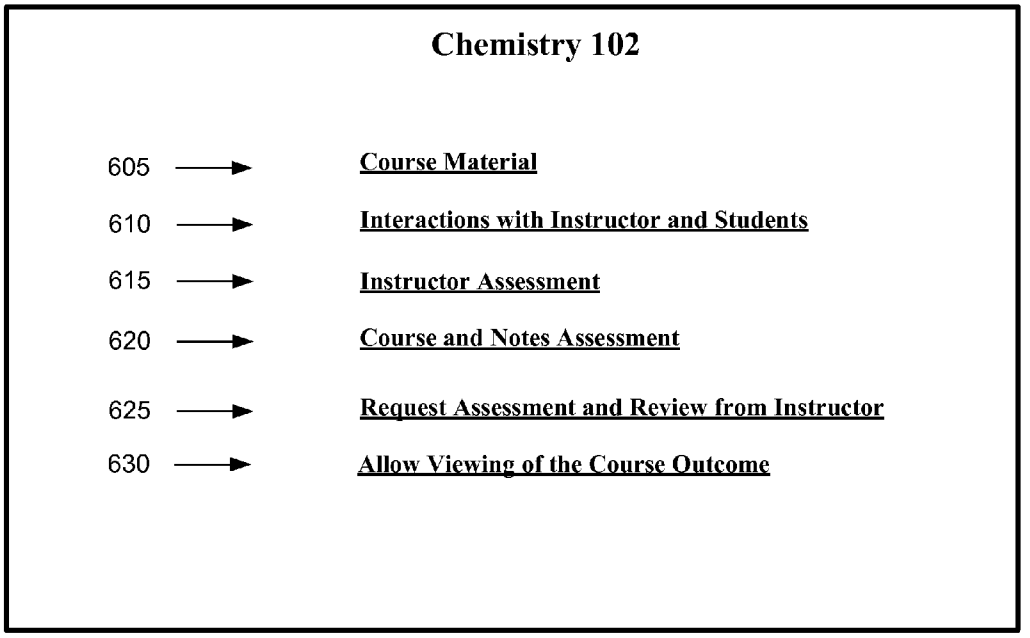


Figure 6

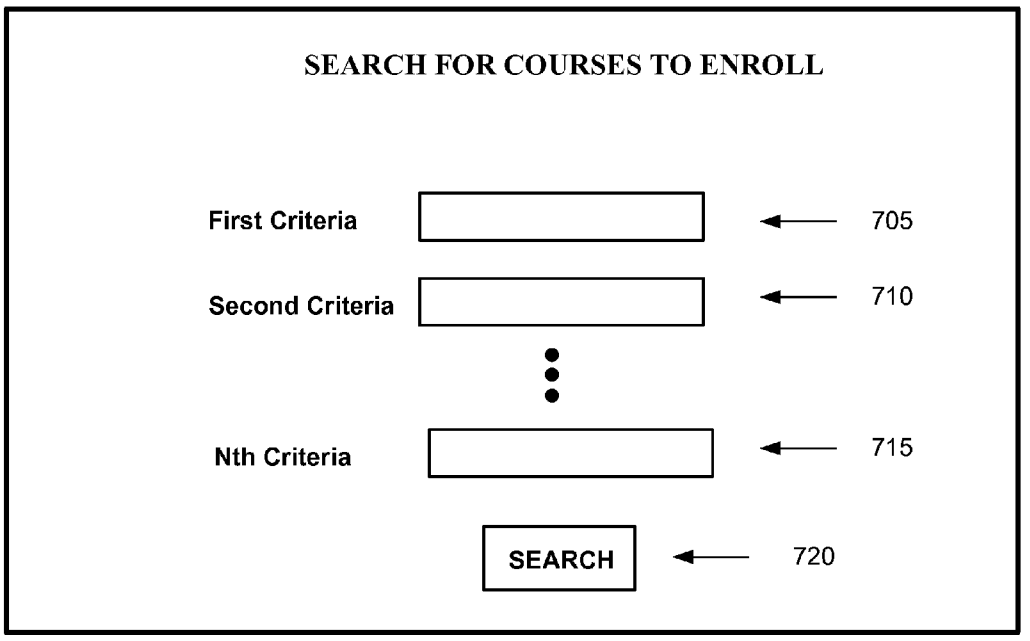


Figure 7

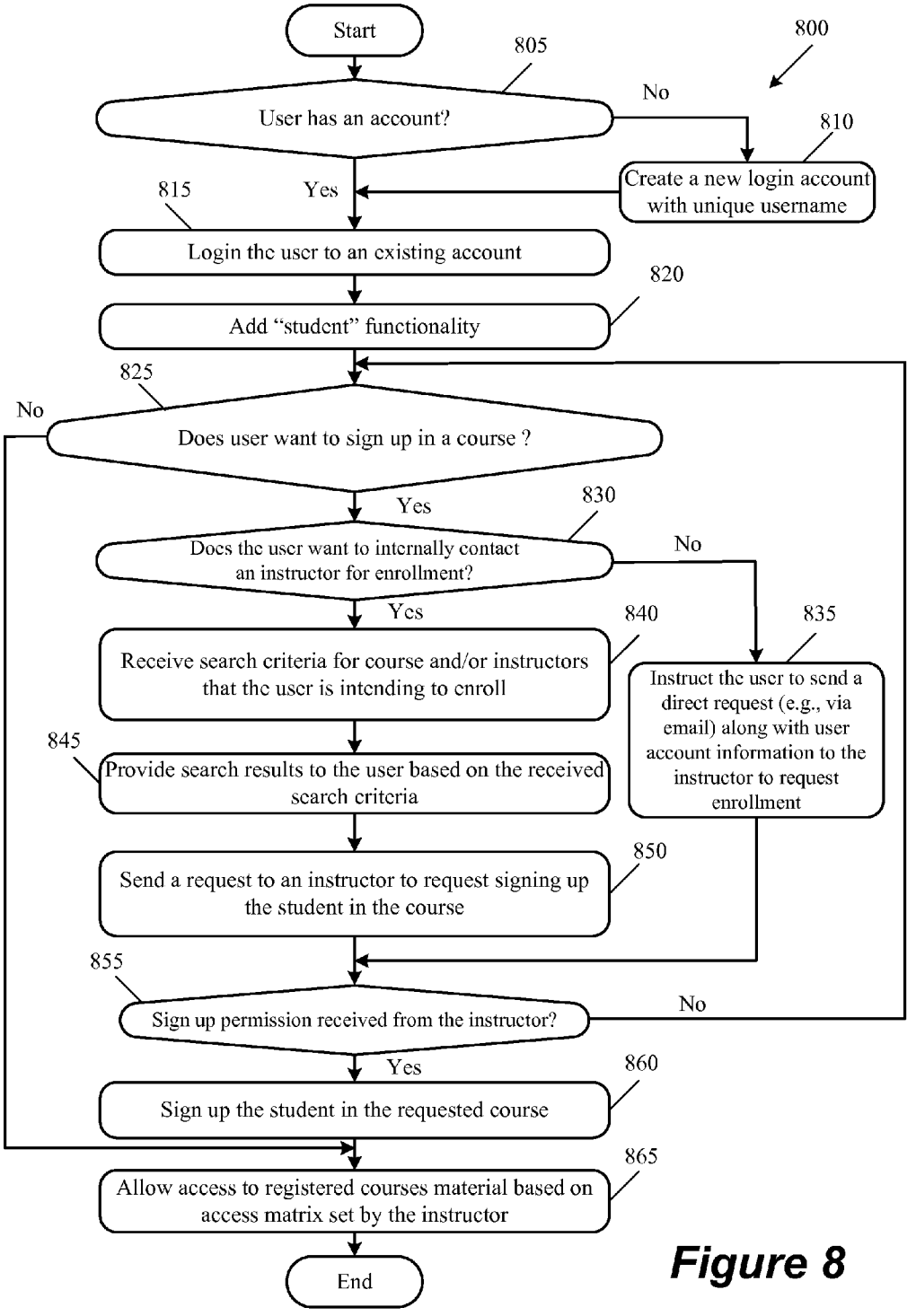

Start
800
805
User has an account?
No
810
Create a new login account with unique username
815
Yes
Login the user to an existing account
820
Add "student" functionality
825
No
Does user want to sign up in a course ?
Yes
830
Does the user want to internally contact an instructor for enrollment?
No
Yes
840
835
Receive search criteria for course and/or instructors that the user is intending to enroll
Instruct the user to send a direct request (e.g., via email) along with user account information to the instructor to request enrollment
845
Provide search results to the user based on the received search criteria
850
Send a request to an instructor to request signing up the student in the course
855
Sign up permission received from the instructor?
No
Yes
860
Sign up the student in the requested course
865
Allow access to registered courses material based on access matrix set by the instructor
End

Figure 8

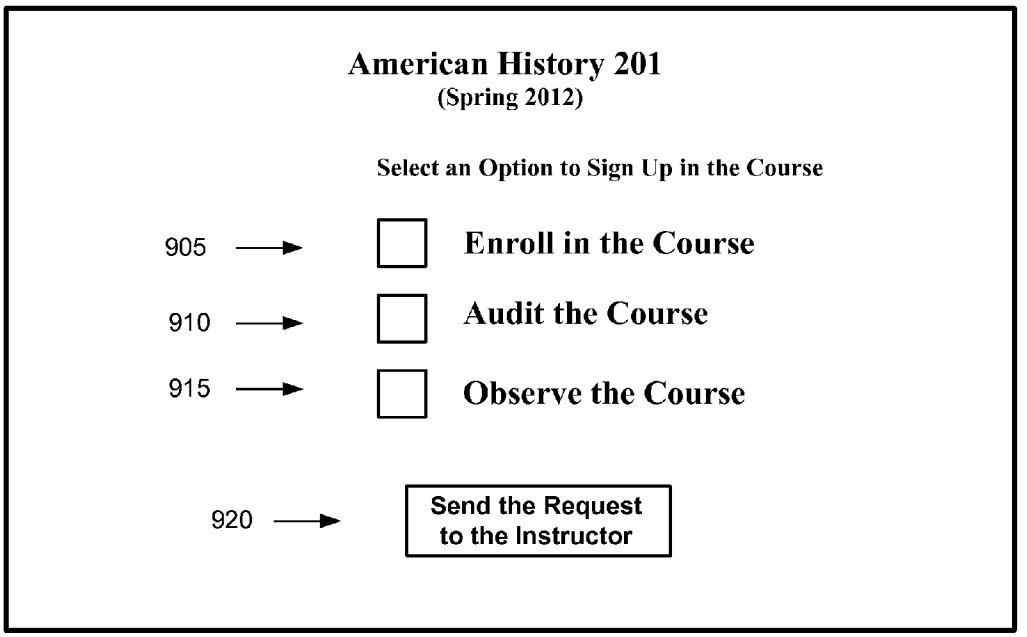

American History 201
(Spring 2012)
Select an Option to Sign Up in the Course
905
Enroll in the Course
910
Audit the Course
915
Observe the Course
920
Send the Request to the Instructor

Figure 9

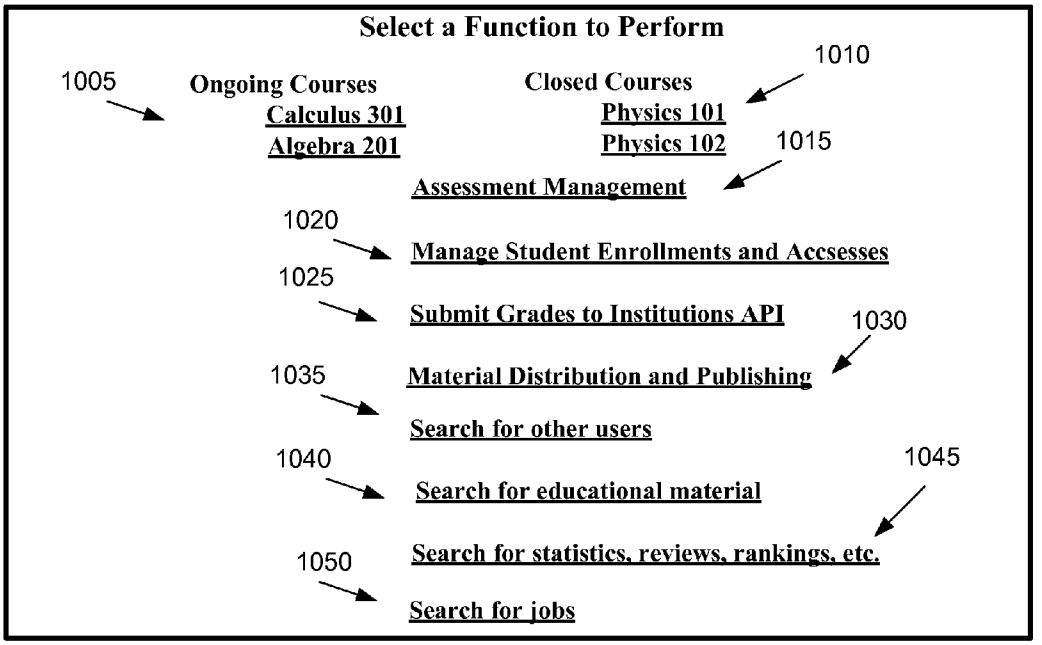


Figure 10

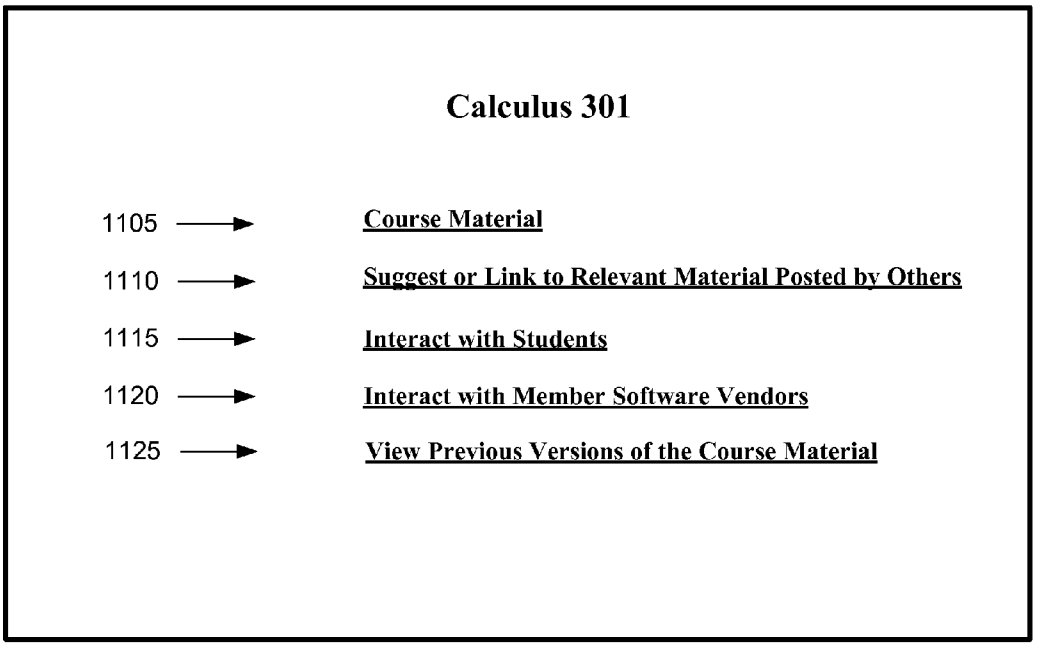


Figure 11

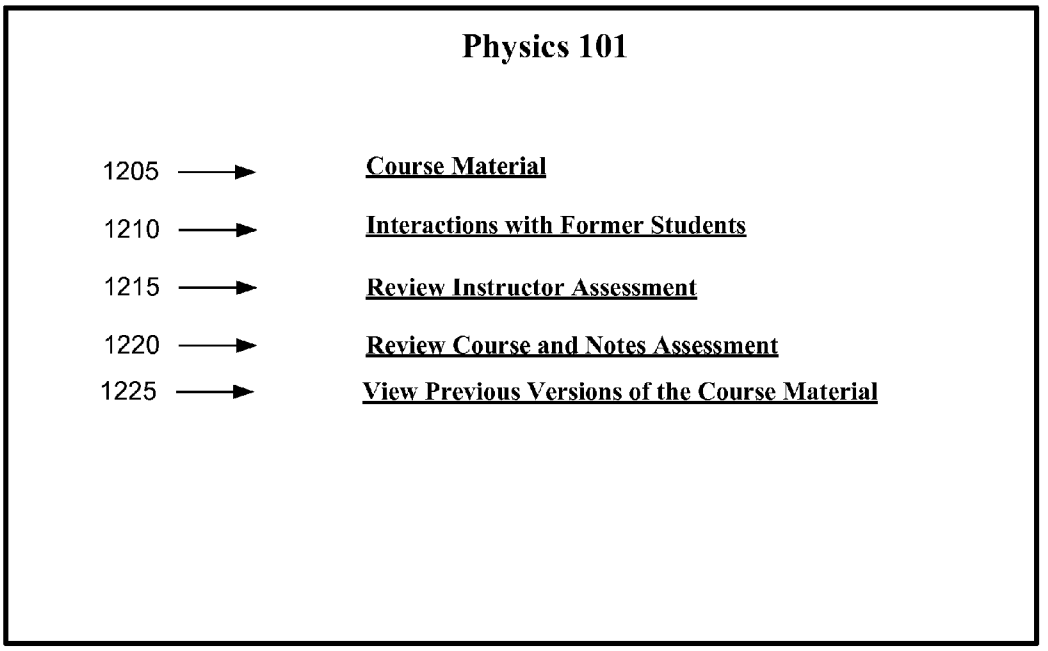


Figure 12

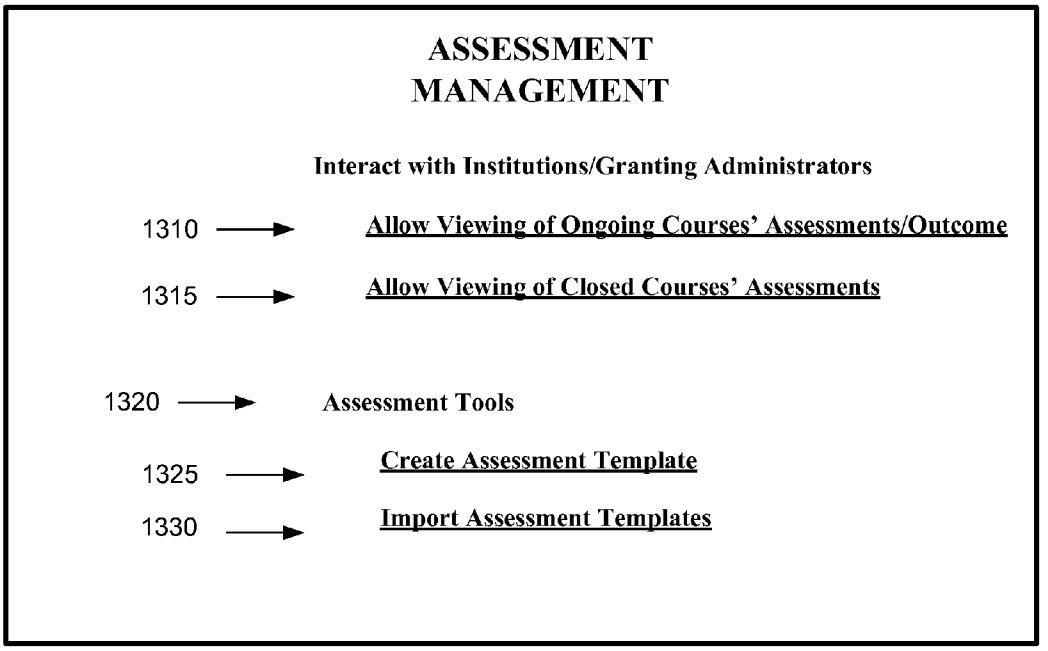


Figure 13

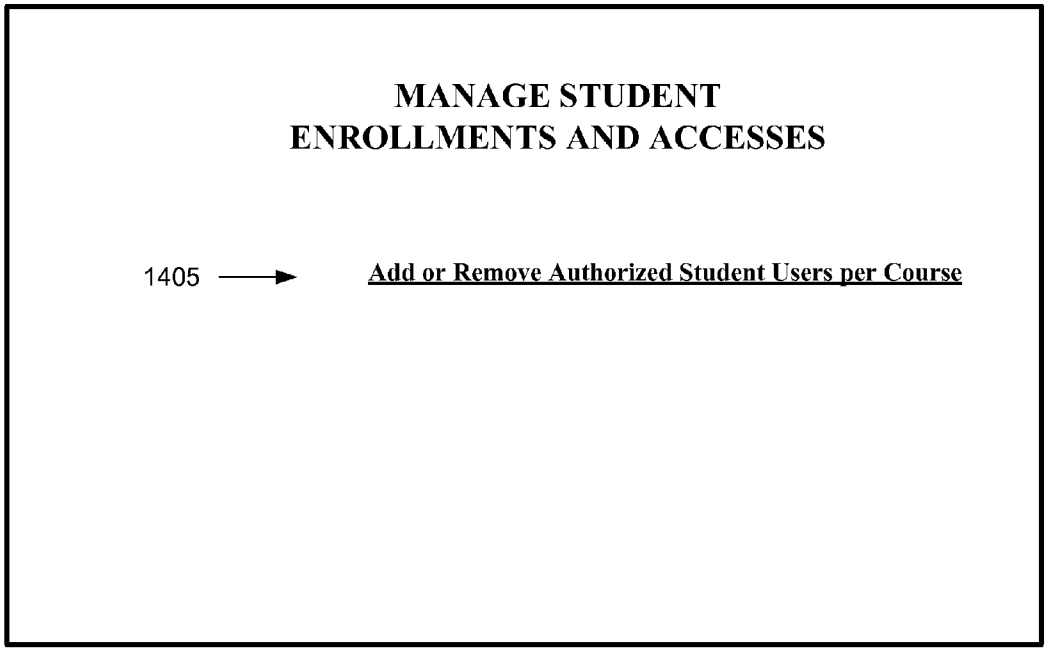


Figure 14

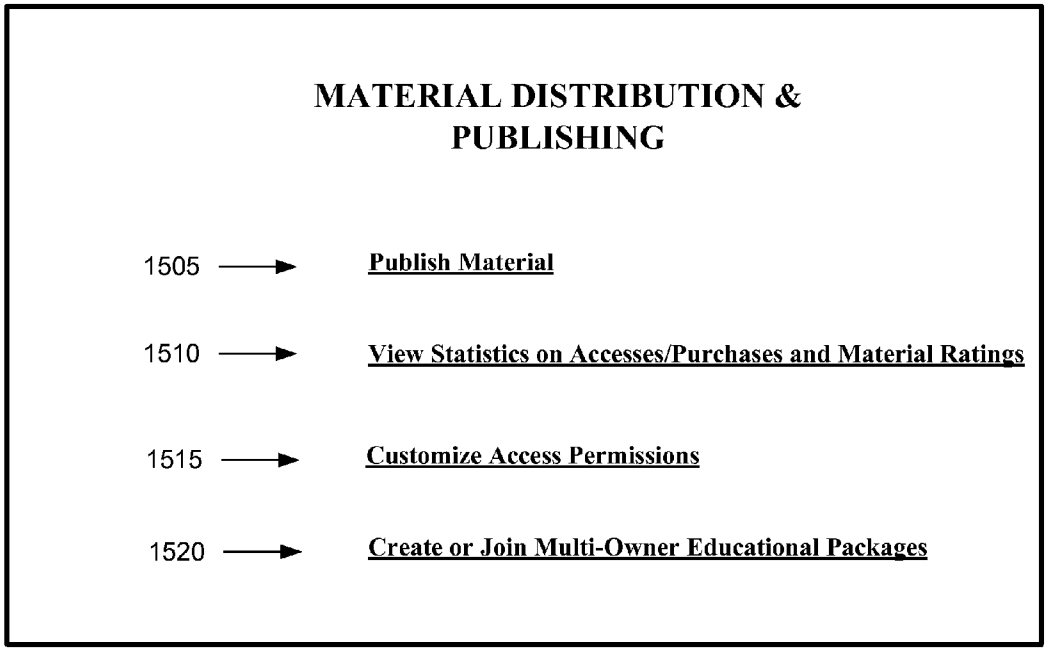


Figure 15

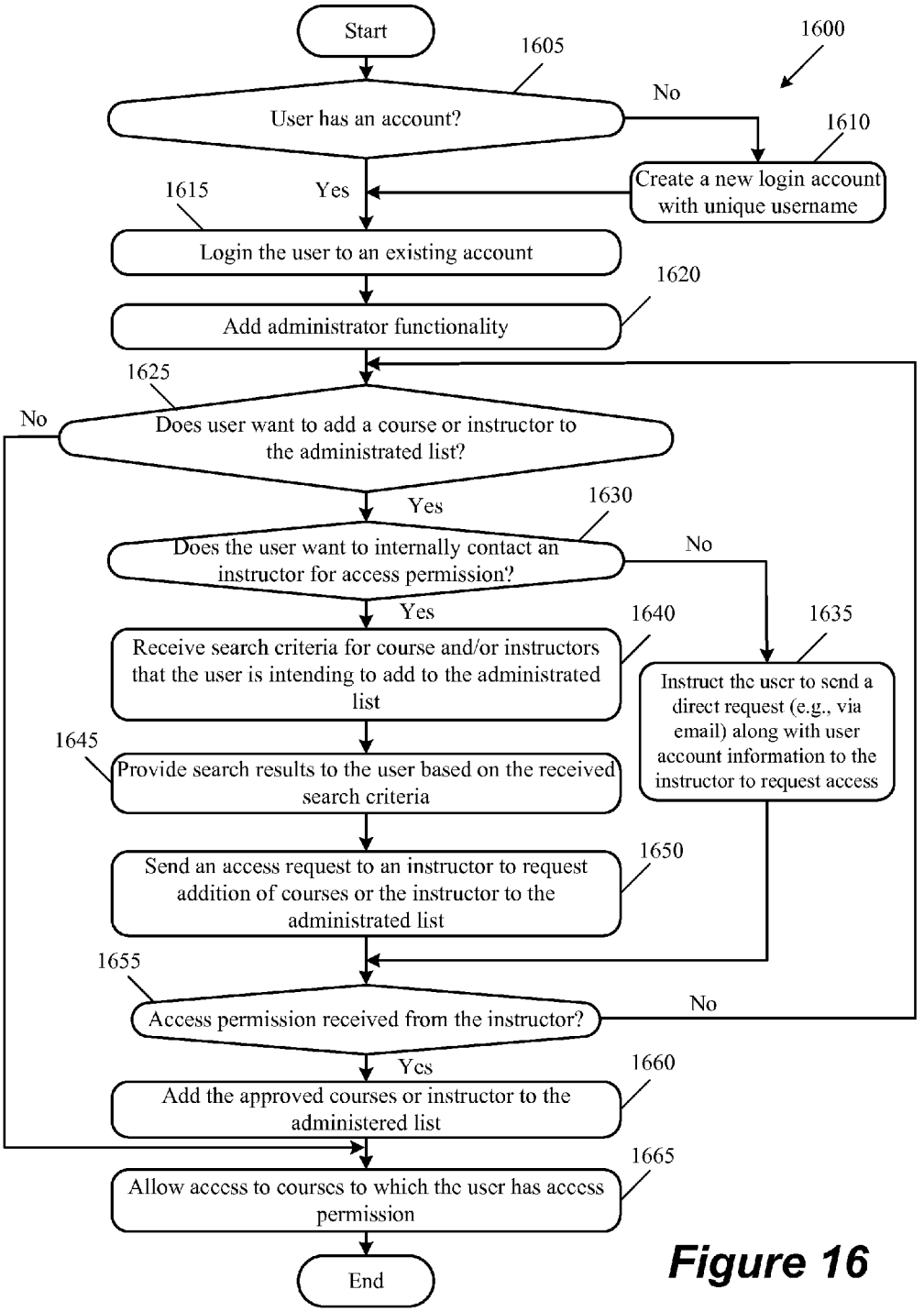

Start
1600
1605
User has an account?
No
1610
Create a new login account with unique username
1615
Yes
Login the user to an existing account
1620
Add administrator functionality
1625
No
Does user want to add a course or instructor to the administrated list?
Yes
1630
Does the user want to internally contact an instructor for access permission?
No
Yes
1640
1635
Receive search criteria for course and/or instructors that the user is intending to add to the administrated list
Instruct the user to send a direct request (e.g., via email) along with user account information to the instructor to request access
1645
Provide search results to the user based on the received search criteria
1650
Send an access request to an instructor to request addition of courses or the instructor to the administrated list
1655
Access permission received from the instructor?
No
Yes
1660
Add the approved courses or instructor to the administered list
1665
Allow access to courses to which the user has access permission
End

Figure 16

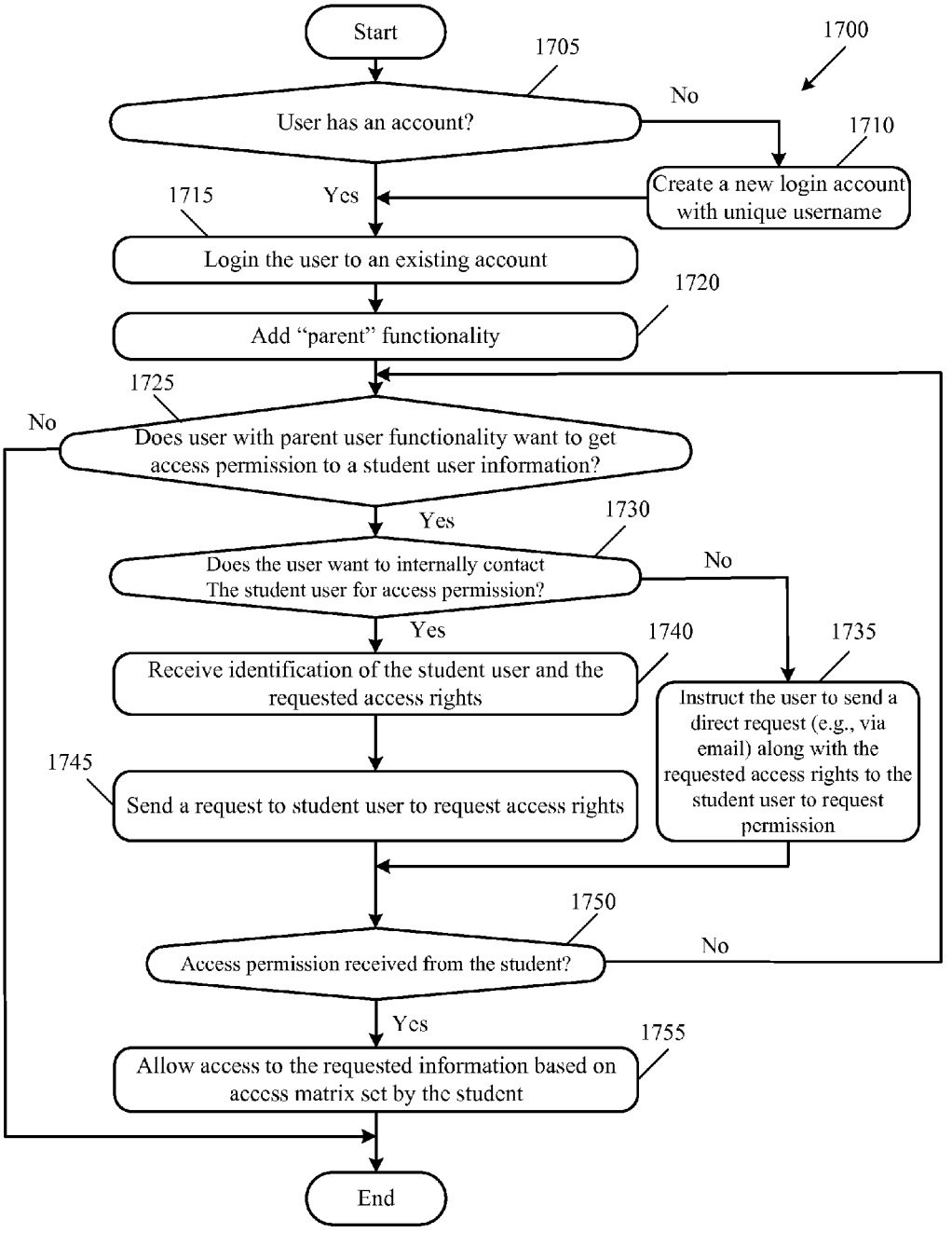

Start
1700
1705
User has an account?
No
1710
Create a new login account with unique username
1715
Yes
Login the user to an existing account
1720
Add "parent" functionality
1725
No
Does user with parent user functionality want to get access permission to a student user information?
Yes
1730
Does the user want to internally contact The student user for access permission?
No
Yes
1740
1735
Receive identification of the student user and the requested access rights
Instruct the user to send a direct request (e.g., via email) along with the requested access rights to the student user to request permission
1745
Send a request to student user to request access rights
1750
Access permission received from the student?
No
Yes
1755
Allow access to the requested information based on access matrix set by the student
End

Figure 17

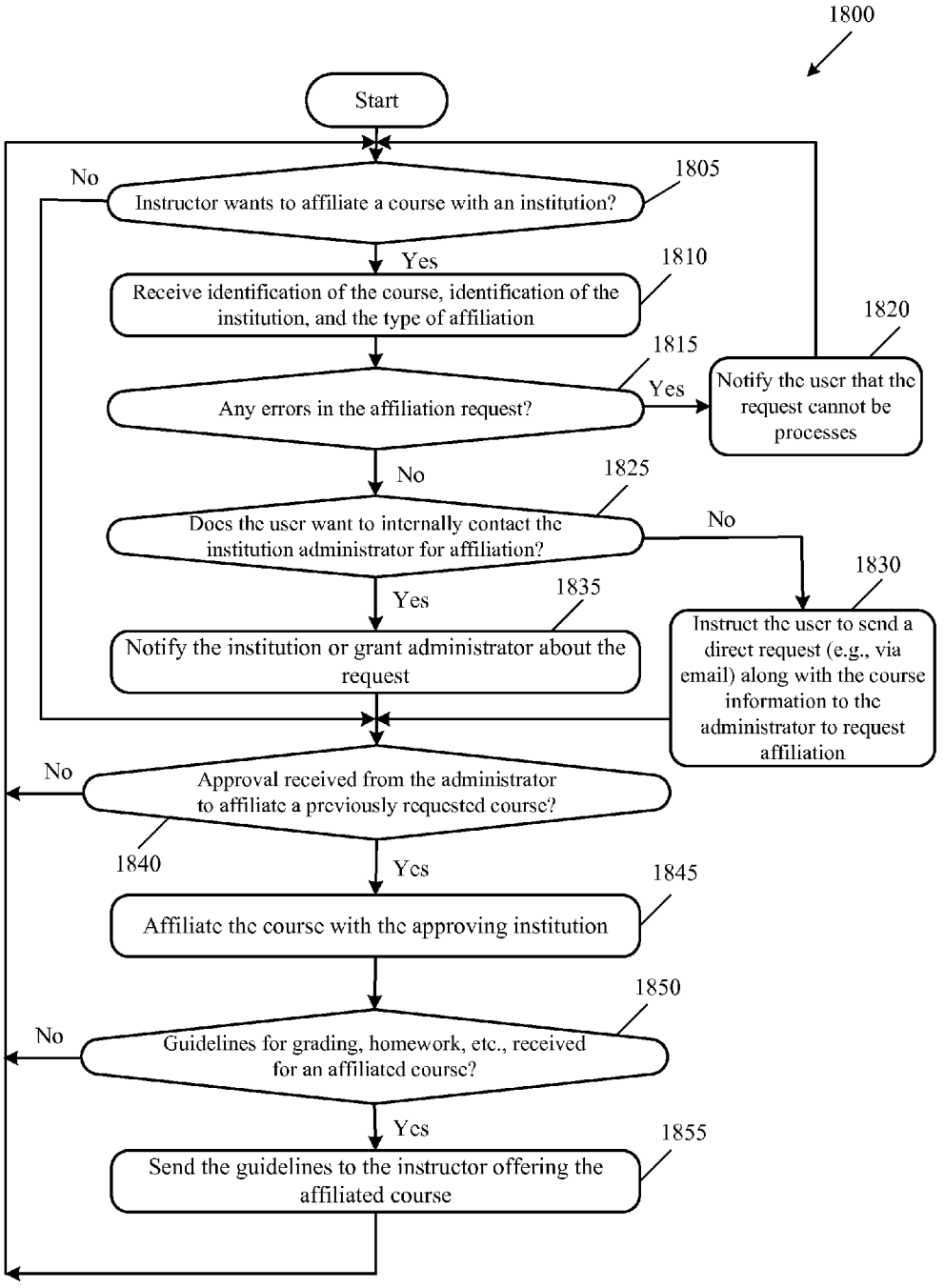

1800
Start
Instructor wants to affiliate a course with an institution?
1805
No
Yes
Receive identification of the course, identification of the institution, and the type of affiliation
1810
Any errors in the affiliation request?
1815
Yes
Notify the user that the request cannot be processes
1820
No
Does the user want to internally contact the institution administrator for affiliation?
1825
No
Yes
Notify the institution or grant administrator about the request
1835
Instruct the user to send a direct request (e.g., via email) along with the course information to the administrator to request affiliation
1830
Approval received from the administrator to affiliate a previously requested course?
No
1840
Yes
Affiliate the course with the approving institution
1845
Guidelines for grading, homework, etc., received for an affiliated course?
1850
No
Yes
Send the guidelines to the instructor offering the affiliated course
1855

Figure 18

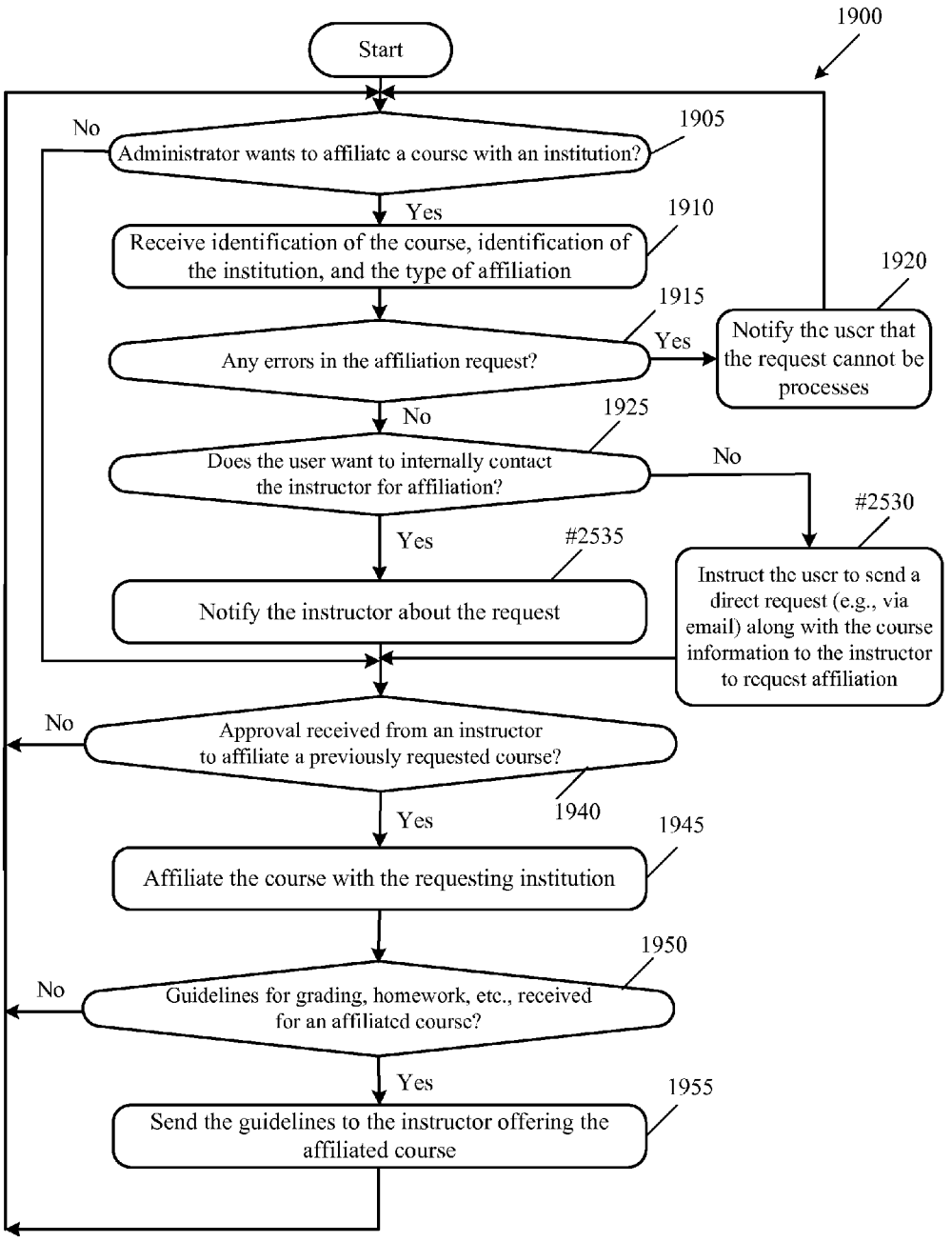

1900
Start
1905
Administrator wants to affiliate a course with an institution?
No
Yes
1910
Receive identification of the course, identification of the institution, and the type of affiliation
1915
Any errors in the affiliation request?
Yes
1920
Notify the user that the request cannot be processes
No
1925
Does the user want to internally contact the instructor for affiliation?
No
#2530
Instruct the user to send a direct request (e.g., via email) along with the course information to the instructor to request affiliation
Yes
#2535
Notify the instructor about the request
No
Approval received from an instructor to affiliate a previously requested course?
1940
Yes
1945
Affiliate the course with the requesting institution
1950
No
Guidelines for grading, homework, etc., received for an affiliated course?
Yes
1955
Send the guidelines to the instructor offering the affiliated course

Figure 19

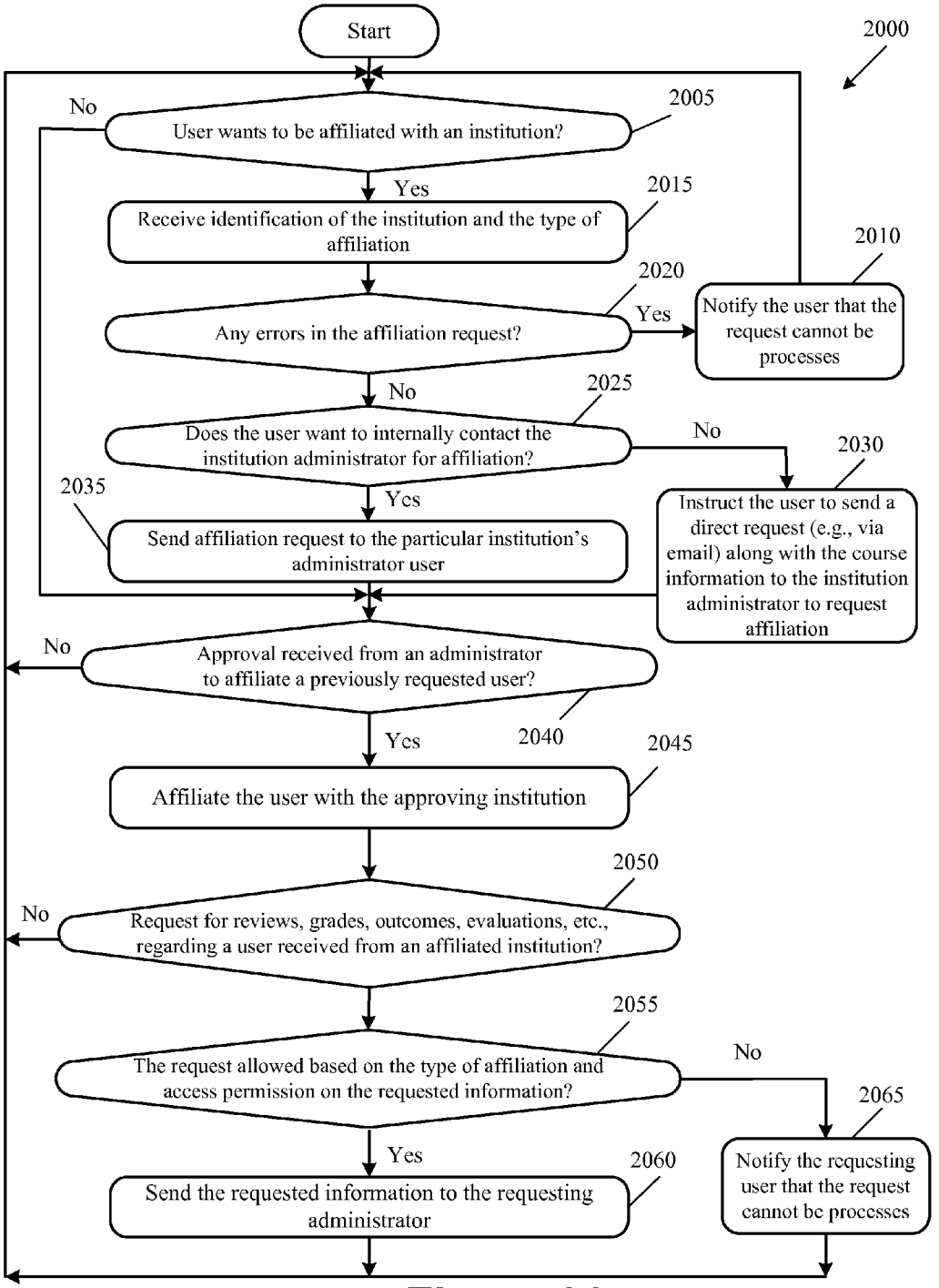

Start
2000
2005
User wants to be affiliated with an institution?
No
Yes
2015
Receive identification of the institution and the type of affiliation
2010
2020
Any errors in the affiliation request?
Yes
Notify the user that the request cannot be processes
No
2025
Does the user want to internally contact the institution administrator for affiliation?
No
2030
2035
Yes
Send affiliation request to the particular institution's administrator user
Instruct the user to send a direct request (e.g., via email) along with the course information to the institution administrator to request affiliation
No
Approval received from an administrator to affiliate a previously requested user?
2040
Yes
2045
Affiliate the user with the approving institution
2050
No
Request for reviews, grades, outcomes, evaluations, etc., regarding a user received from an affiliated institution?
2055
No
The request allowed based on the type of affiliation and access permission on the requested information?
2065
Yes
2060
Send the requested information to the requesting administrator
Notify the requesting user that the request cannot be processes

Figure 20

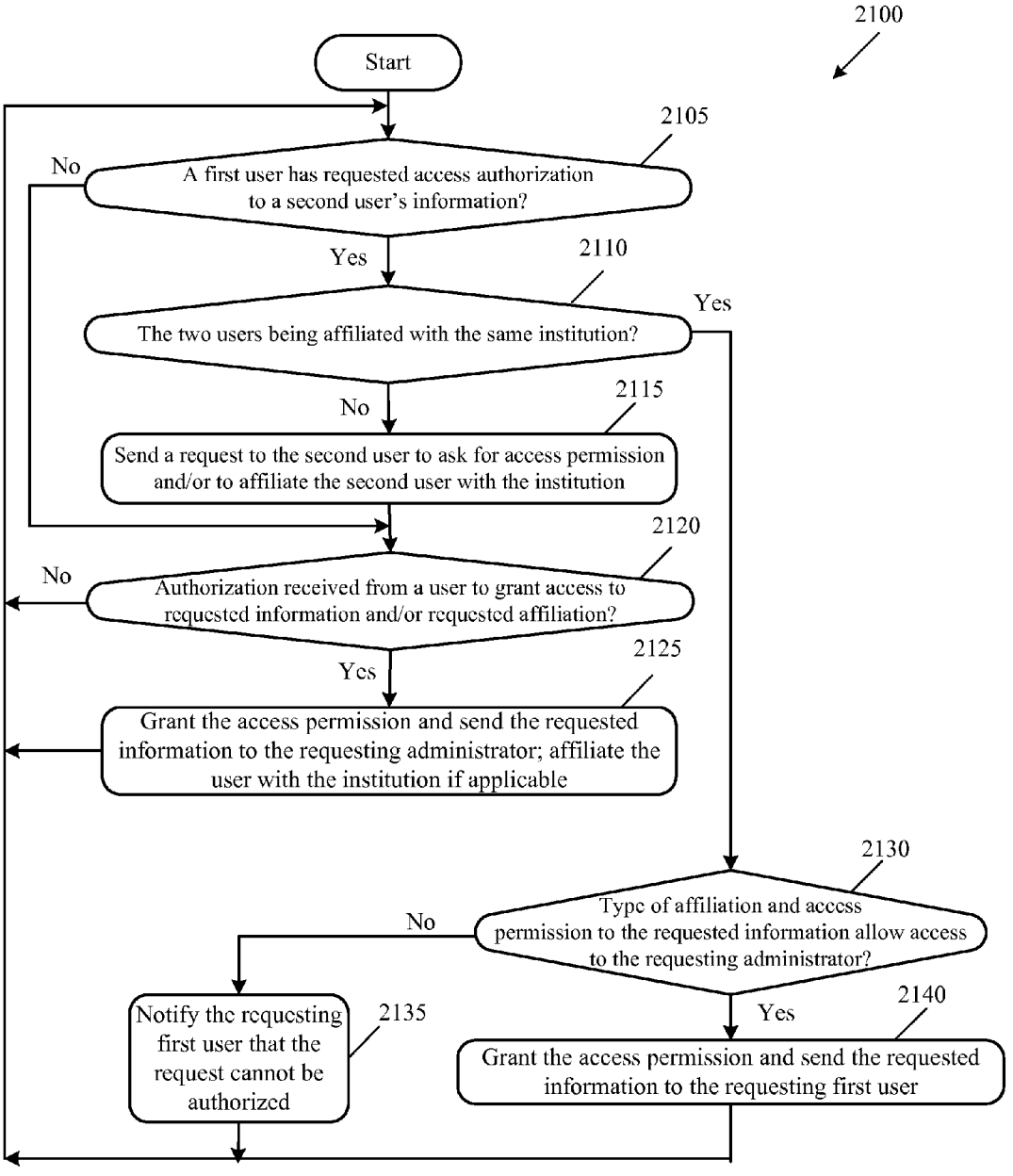

2100
Start
2105
A first user has requested access authorization to a second user's information?
No
Yes
2110
The two users being affiliated with the same institution?
Yes
No
2115
Send a request to the second user to ask for access permission and/or to affiliate the second user with the institution
2120
Authorization received from a user to grant access to requested information and/or requested affiliation?
No
Yes
2125
Grant the access permission and send the requested information to the requesting administrator; affiliate the user with the institution if applicable
2130
Type of affiliation and access permission to the requested information allow access to the requesting administrator?
No
Yes
2135
Notify the requesting first user that the request cannot be authorized
2140
Grant the access permission and send the requested information to the requesting first user

Figure 21

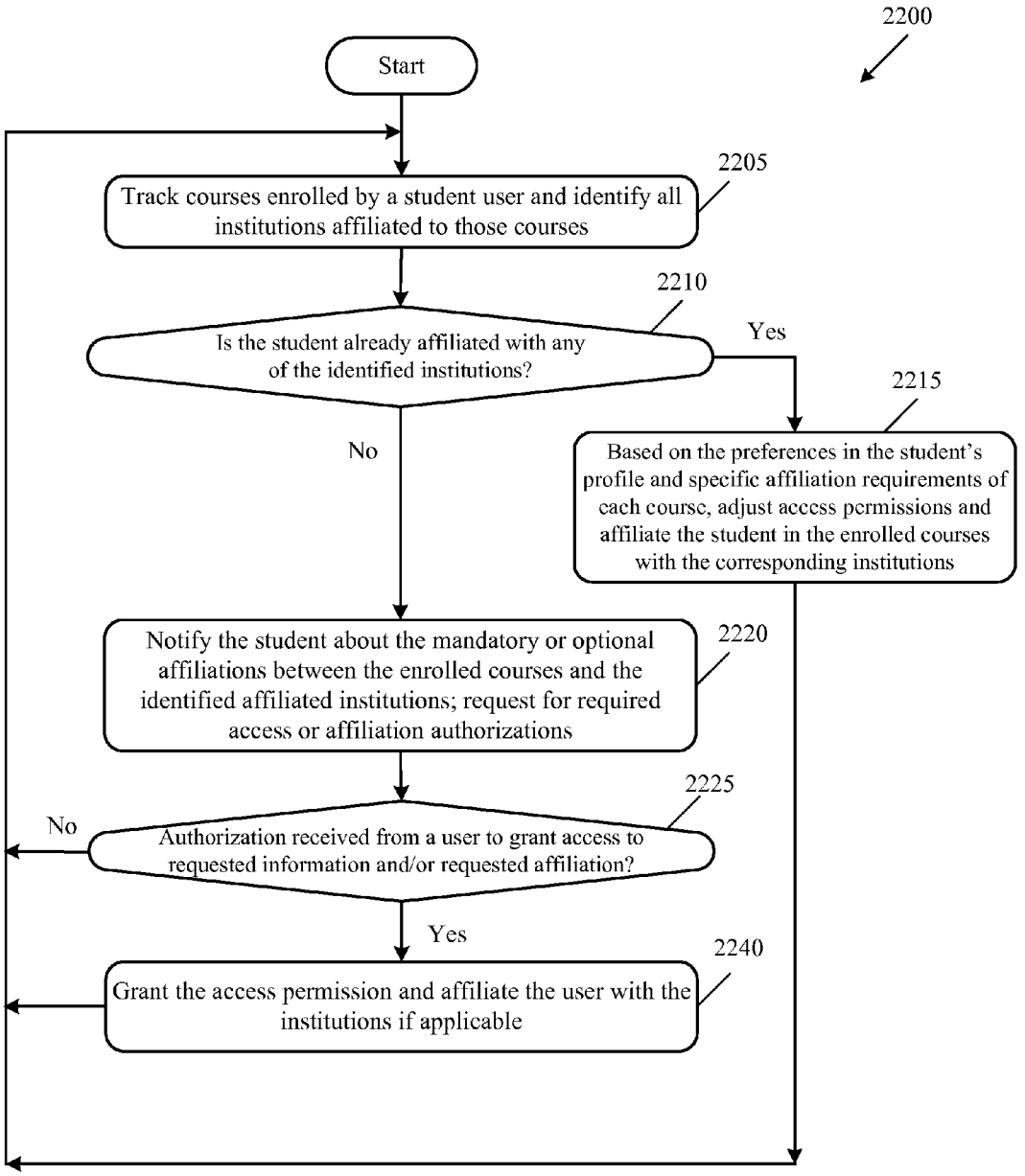

2200
Start
2205
Track courses enrolled by a student user and identify all institutions affiliated to those courses
2210
Is the student already affiliated with any of the identified institutions?
Yes
No
2215
Based on the preferences in the student's profile and specific affiliation requirements of each course, adjust access permissions and affiliate the student in the enrolled courses with the corresponding institutions
2220
Notify the student about the mandatory or optional affiliations between the enrolled courses and the identified affiliated institutions; request for required access or affiliation authorizations
2225
No
Authorization received from a user to grant access to requested information and/or requested affiliation?
Yes
2240
Grant the access permission and affiliate the user with the institutions if applicable

Figure 22

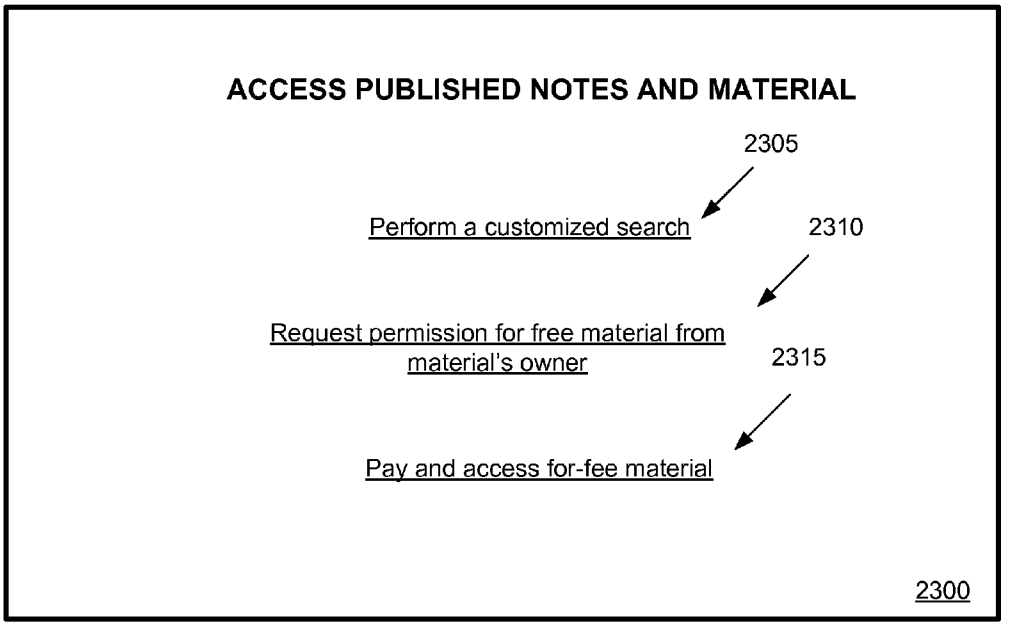


Figure 23

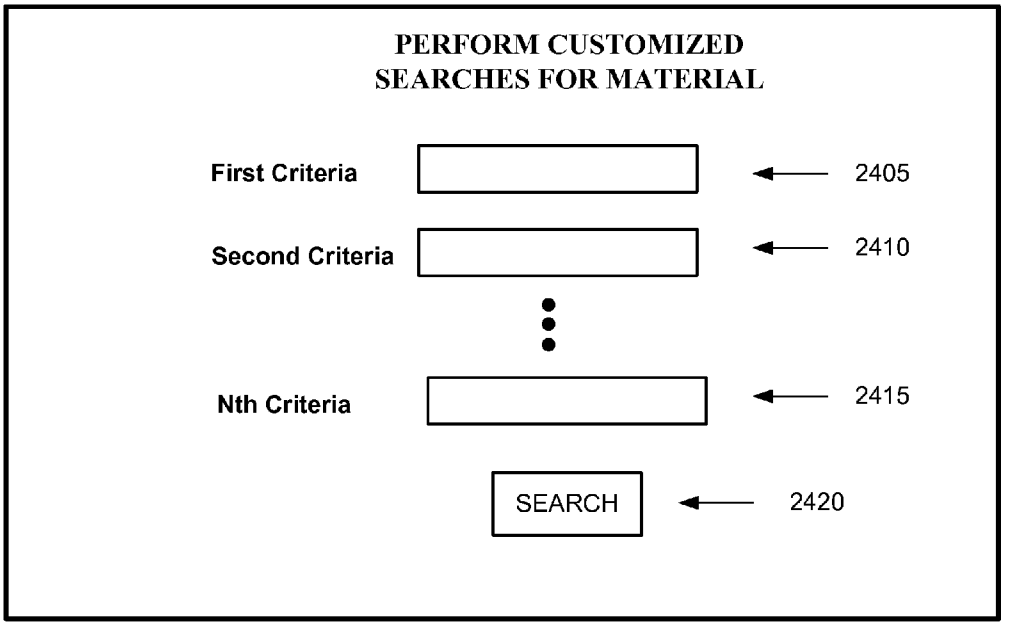


Figure 24

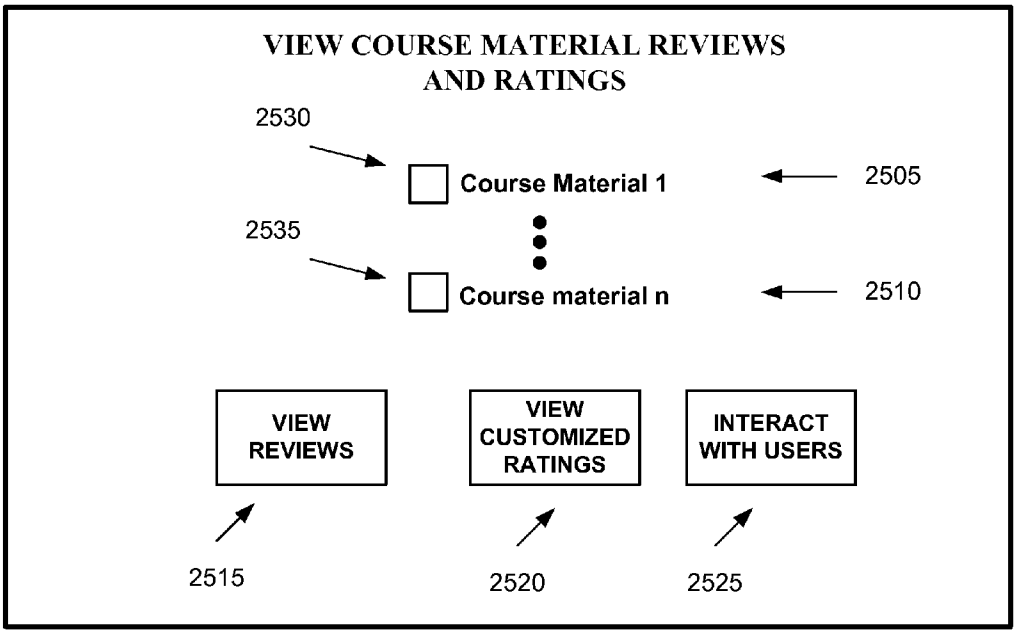

VIEW COURSE MATERIAL REVIEWS AND RATINGS
2530
Course Material 1
2505
2535
Course material n
2510
VIEW REVIEWS
VIEW CUSTOMIZED RATINGS
INTERACT WITH USERS
2515
2520
2525

Figure 25

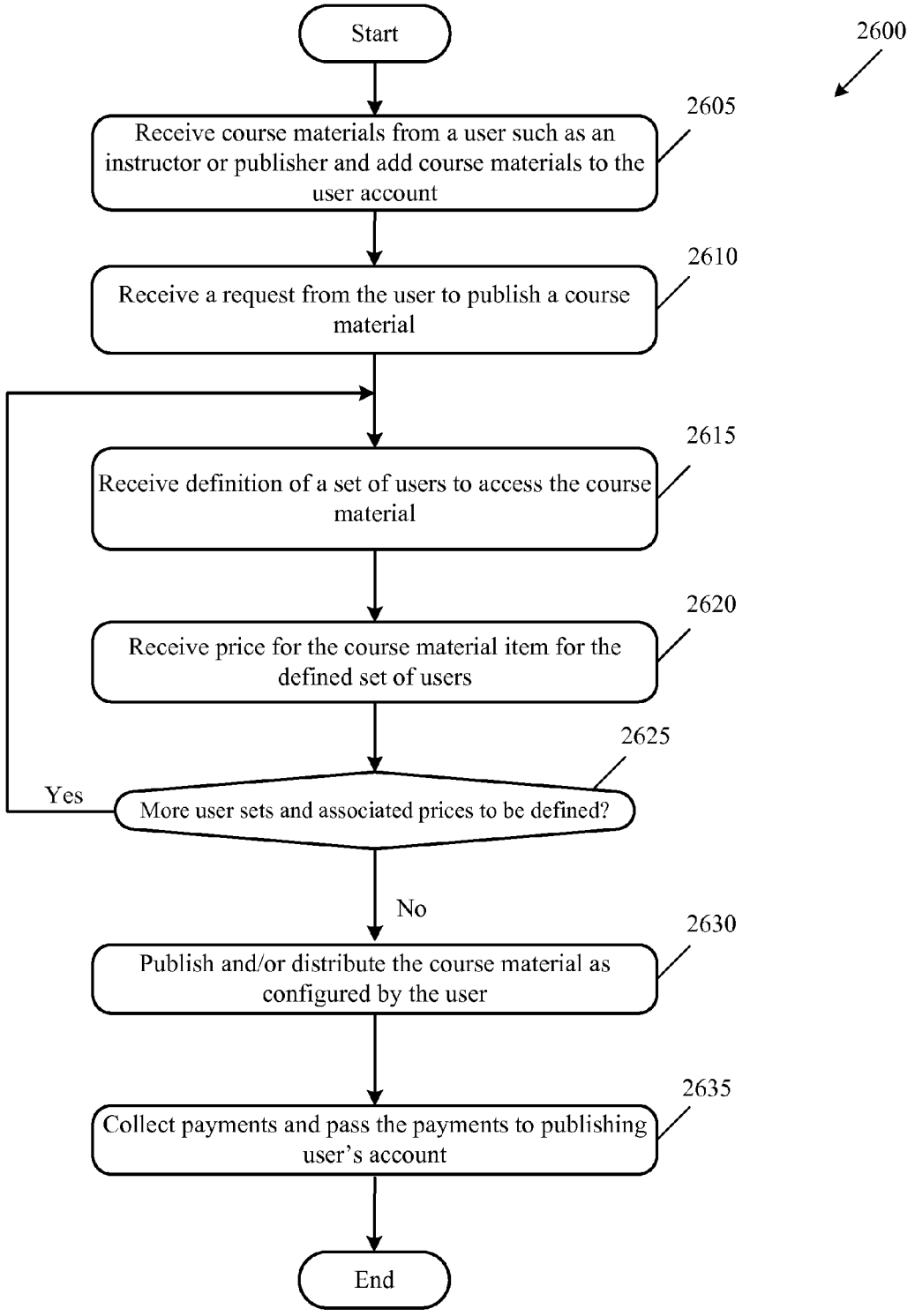

Start
2600
2605
Receive course materials from a user such as an instructor or publisher and add course materials to the user account
2610
Receive a request from the user to publish a course material
2615
Receive definition of a set of users to access the course material
2620
Receive price for the course material item for the defined set of users
2625
Yes
More user sets and associated prices to be defined?
No
2630
Publish and/or distribute the course material as configured by the user
2635
Collect payments and pass the payments to publishing user's account
End

Figure 26

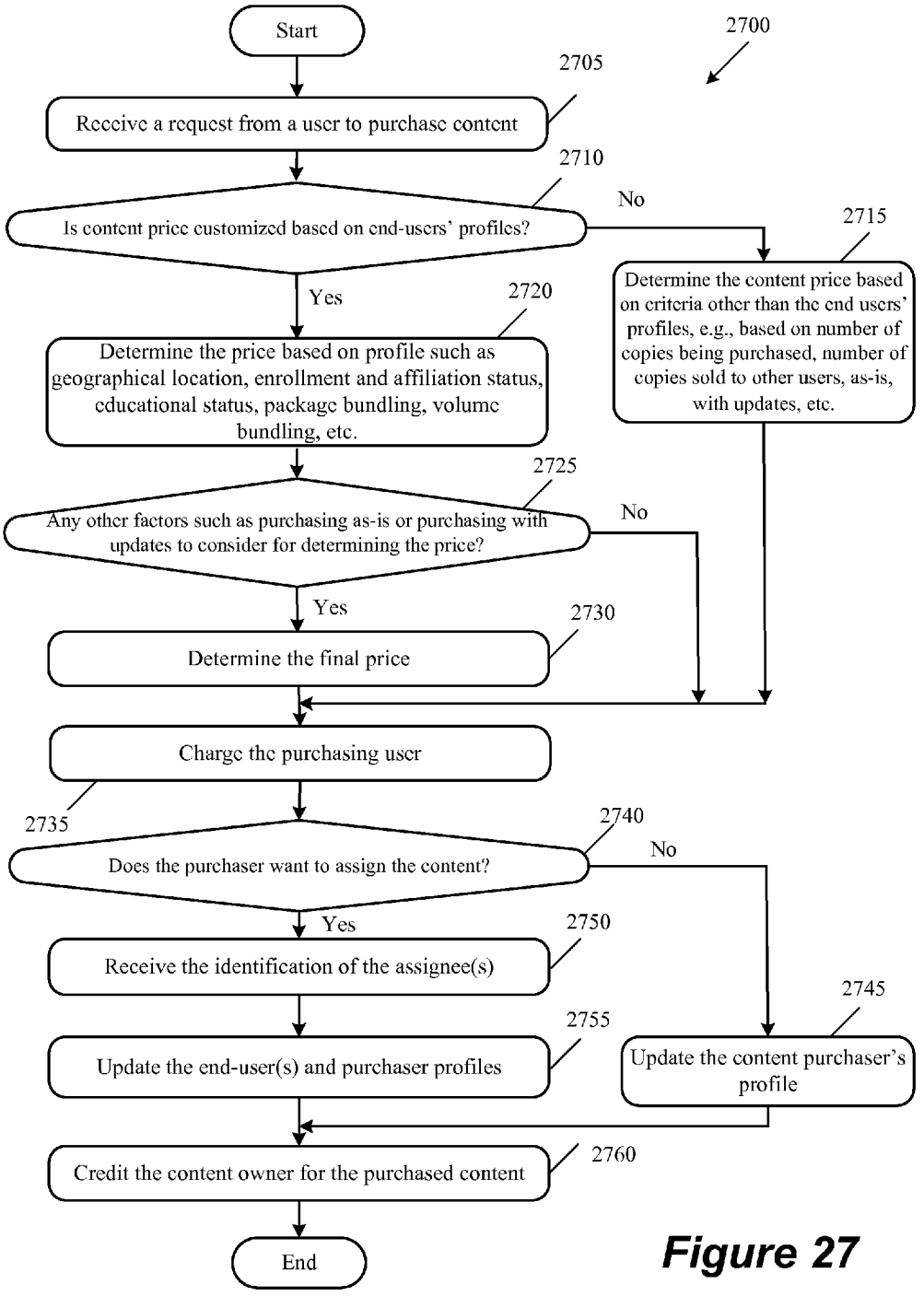

Start
2700
2705
Receive a request from a user to purchase content
2710
Is content price customized based on end-users' profiles?
No
2715
Determine the content price based on criteria other than the end users' profiles, e.g., based on number of copies being purchased, number of copies sold to other users, as-is, with updates, etc.
Yes
2720
Determine the price based on profile such as geographical location, enrollment and affiliation status, educational status, package bundling, volume bundling, etc.
2725
Any other factors such as purchasing as-is or purchasing with updates to consider for determining the price?
No
Yes
2730
Determine the final price
Charge the purchasing user
2735
2740
Does the purchaser want to assign the content?
No
Yes
2750
Receive the identification of the assignee(s)
2745
2755
Update the end-user(s) and purchaser profiles
Update the content purchaser's profile
2760
Credit the content owner for the purchased content
End

Figure 27

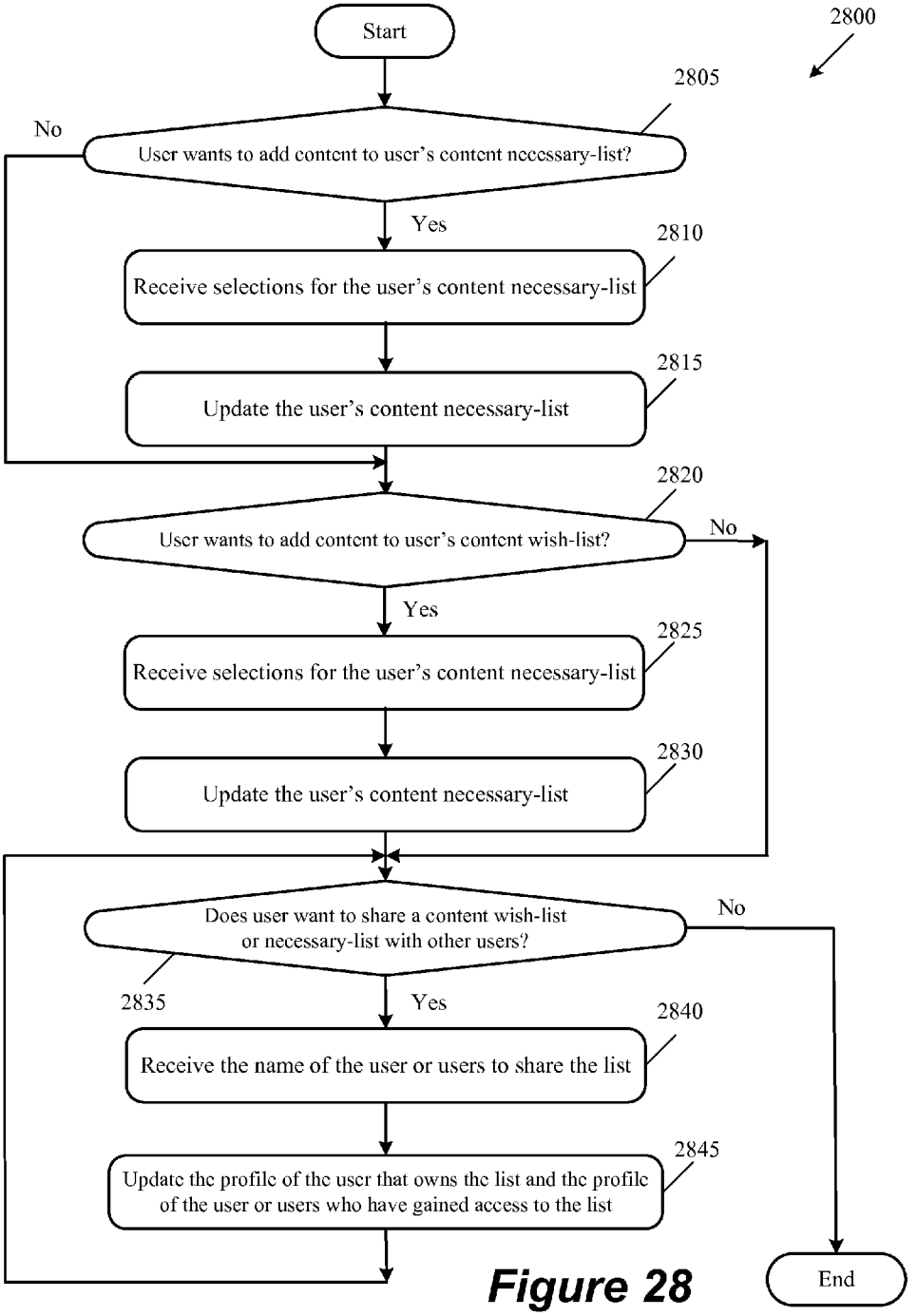

2800
Start
2805
No
User wants to add content to user's content necessary-list?
Yes
2810
Receive selections for the user's content necessary-list
2815
Update the user's content necessary-list
2820
User wants to add content to user's content wish-list?
No
Yes
2825
Receive selections for the user's content necessary-list
2830
Update the user's content necessary-list
Does user want to share a content wish-list or necessary-list with other users?
No
2835
Yes
2840
Receive the name of the user or users to share the list
2845
Update the profile of the user that owns the list and the profile of the user or users who have gained access to the list
End

Figure 28

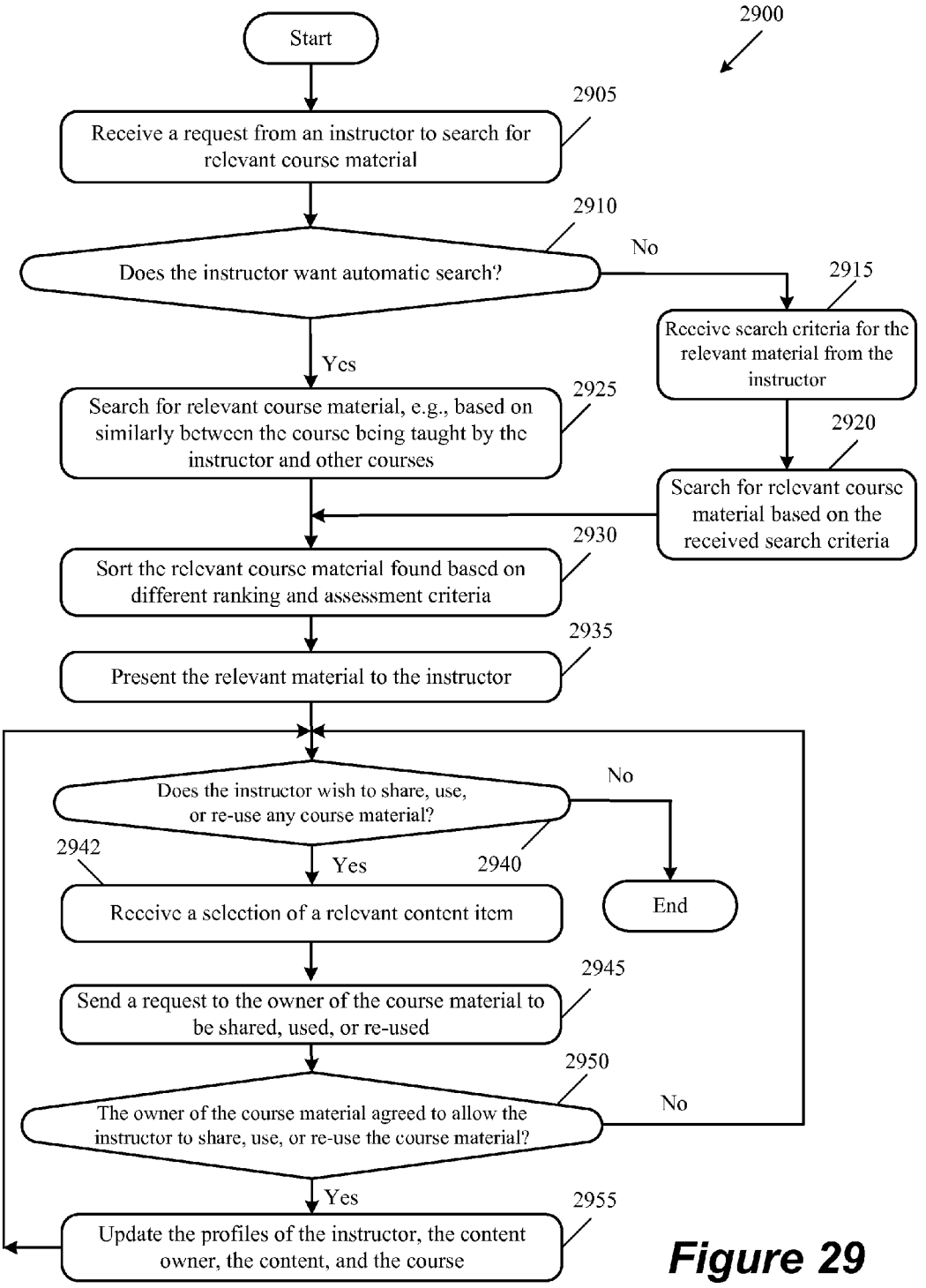

2900
Start
2905
Receive a request from an instructor to search for relevant course material
2910
Does the instructor want automatic search?
No
2915
Receive search criteria for the relevant material from the instructor
Yes
2925
Search for relevant course material, e.g., based on similarly between the course being taught by the instructor and other courses
2920
Search for relevant course material based on the received search criteria
2930
Sort the relevant course material found based on different ranking and assessment criteria
2935
Present the relevant material to the instructor
Does the instructor wish to share, use, or re-use any course material?
No
2942
Yes
2940
End
Receive a selection of a relevant content item
2945
Send a request to the owner of the course material to be shared, used, or re-used
2950
The owner of the course material agreed to allow the instructor to share, use, or re-use the course material?
No
Yes
2955
Update the profiles of the instructor, the content owner, the content, and the course

Figure 29

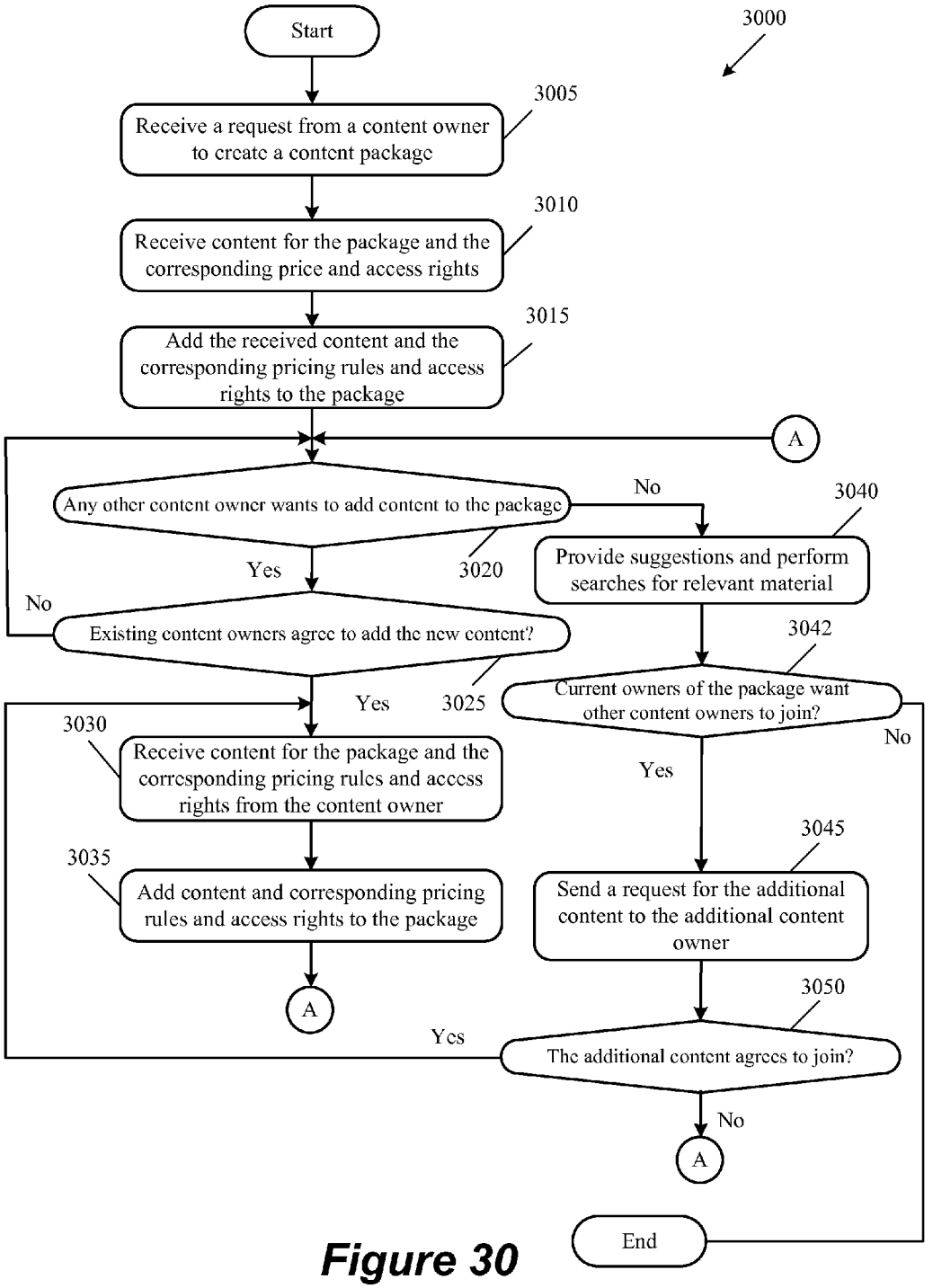

Start
3000
3005
Receive a request from a content owner to create a content package
3010
Receive content for the package and the corresponding price and access rights
3015
Add the received content and the corresponding pricing rules and access rights to the package
A
Any other content owner wants to add content to the package
No
3040
Provide suggestions and perform searches for relevant material
Yes
3020
No
Existing content owners agree to add the new content?
3042
Current owners of the package want other content owners to join?
Yes
3025
No
3030
Receive content for the package and the corresponding pricing rules and access rights from the content owner
Yes
3045
3035
Add content and corresponding pricing rules and access rights to the package
Send a request for the additional content to the additional content owner
A
3050
Yes
The additional content agrees to join?
No
A
End

Figure 30

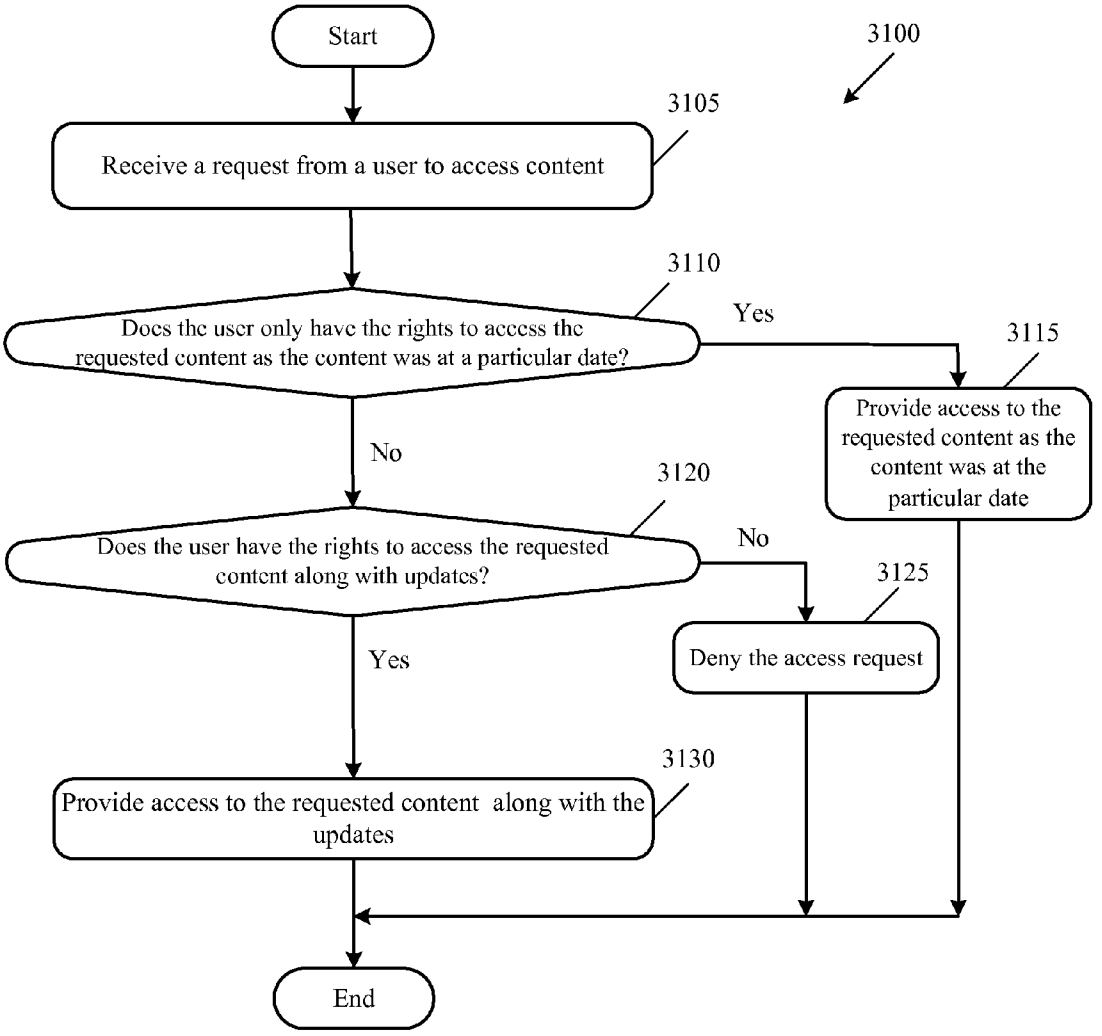

Start
3100
3105
Receive a request from a user to access content
3110
Does the user only have the rights to access the requested content as the content was at a particular date?
Yes
3115
Provide access to the requested content as the content was at the particular date
No
3120
Does the user have the rights to access the requested content along with updates?
No
3125
Deny the access request
Yes
3130
Provide access to the requested content along with the updates
End

Figure 31

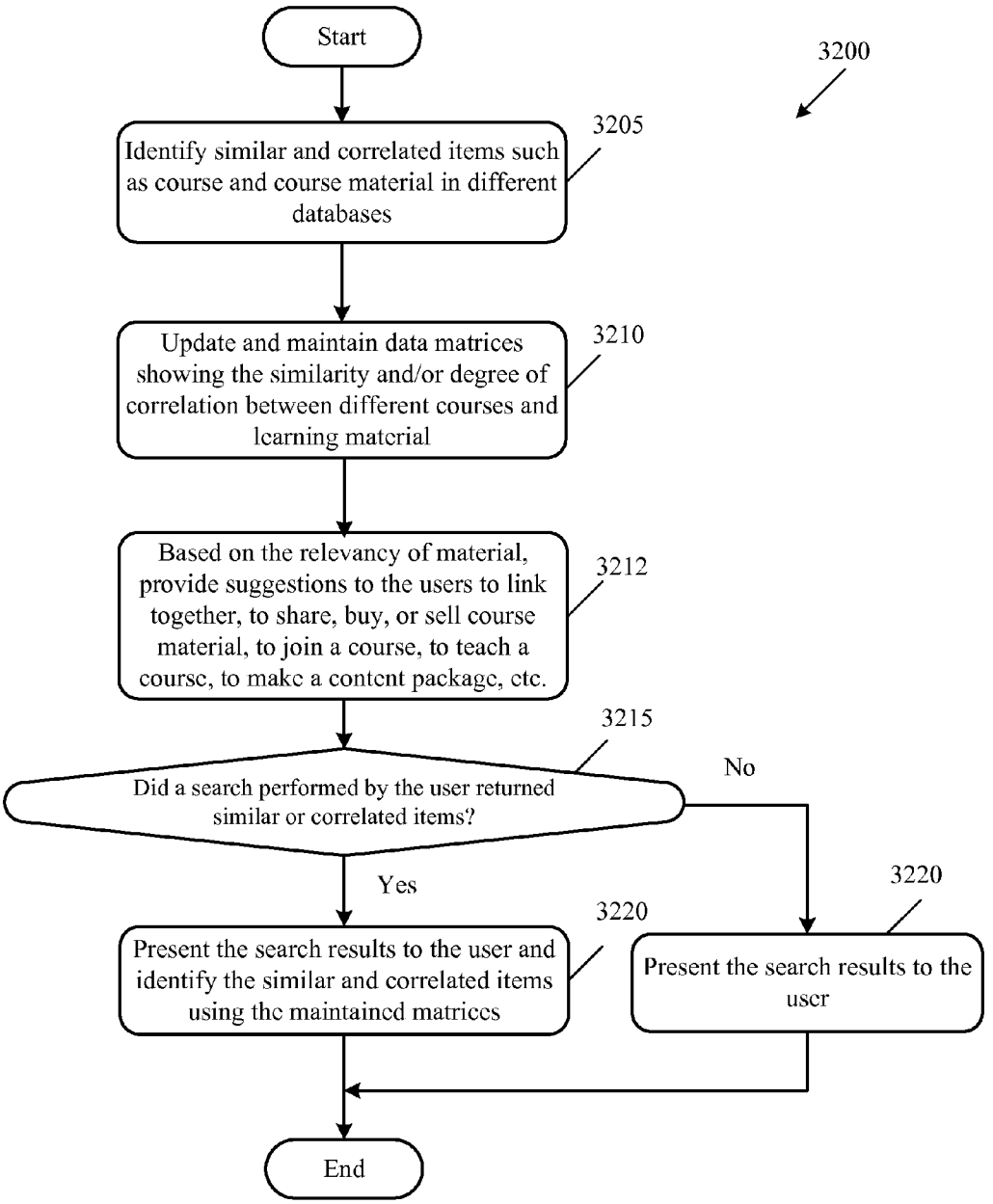

Start
3200
Identify similar and correlated items such as course and course material in different databases
3205
Update and maintain data matrices showing the similarity and/or degree of correlation between different courses and learning material
3210
Based on the relevancy of material, provide suggestions to the users to link together, to share, buy, or sell course material, to join a course, to teach a course, to make a content package, etc.
3212
Did a search performed by the user returned similar or correlated items?
3215
No
Yes
Present the search results to the user and identify the similar and correlated items using the maintained matrices
3220
Present the search results to the user
3220
End

Figure 32

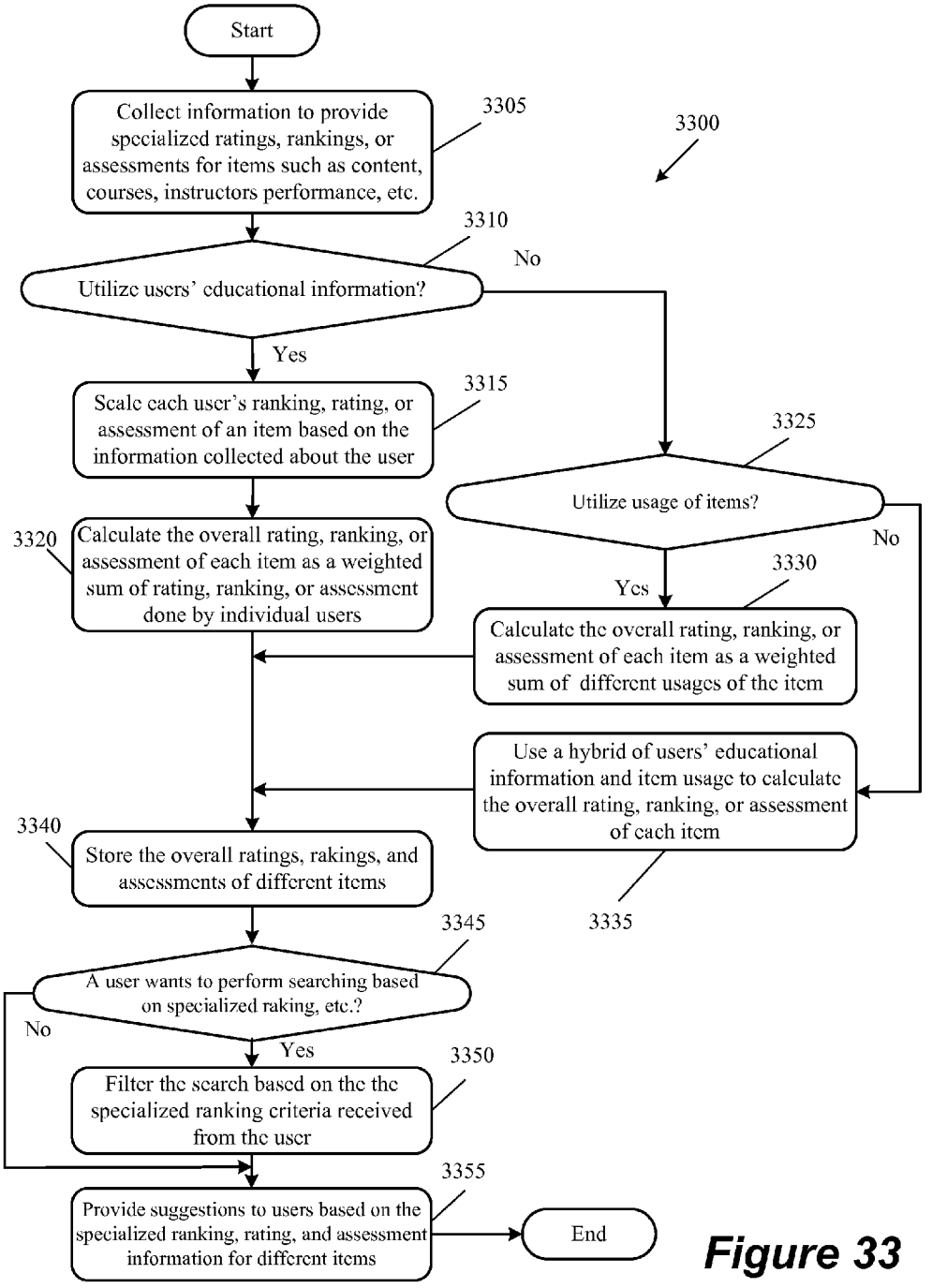

Start
Collect information to provide specialized ratings, rankings, or assessments for items such as content, courses, instructors performance, etc.
3305
3300
3310
Utilize users' educational information?
No
Yes
Scale each user's ranking, rating, or assessment of an item based on the information collected about the user
3315
3325
Utilize usage of items?
No
Yes
3320
Calculate the overall rating, ranking, or assessment of each item as a weighted sum of rating, ranking, or assessment done by individual users
3330
Calculate the overall rating, ranking, or assessment of each item as a weighted sum of different usages of the item
Use a hybrid of users' educational information and item usage to calculate the overall rating, ranking, or assessment of each item
3335
3340
Store the overall ratings, rakings, and assessments of different items
3345
A user wants to perform searching based on specialized raking, etc.?
No
Yes
3350
Filter the search based on the the specialized ranking criteria received from the user
3355
Provide suggestions to users based on the specialized ranking, rating, and assessment information for different items
End

Figure 33

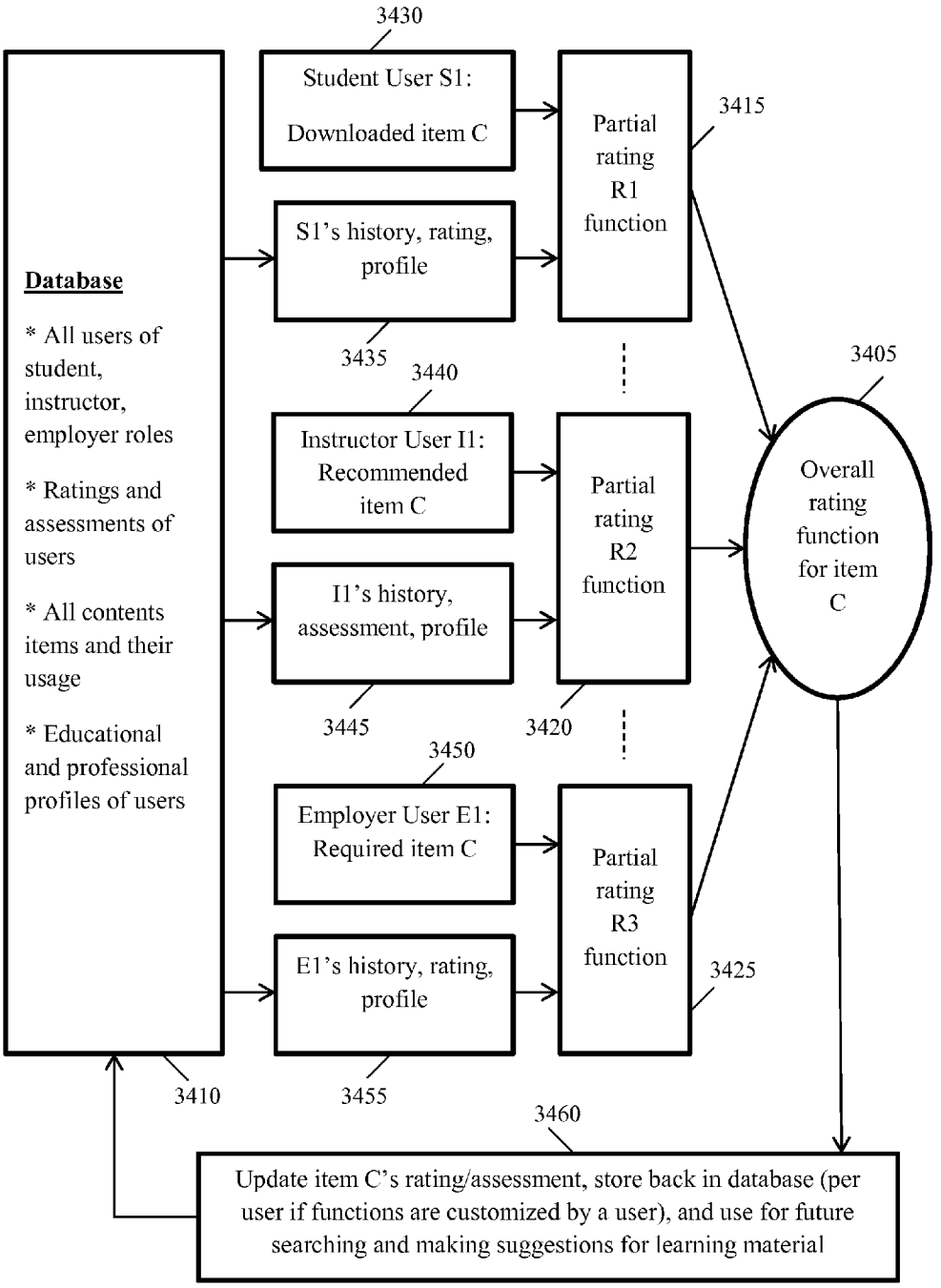

3430
Student User S1:
Downloaded item C
3415
Partial rating R1 function
S1's history, rating, profile
3435
3440
Instructor User I1: Recommended item C
Partial rating R2 function
3405
Overall rating function for item C
I1's history, assessment, profile
3445
3420
3450
Employer User E1: Required item C
Partial rating R3 function
E1's history, rating, profile
3425
Database
* All users of student, instructor, employer roles
* Ratings and assessments of users
* All contents items and their usage
* Educational and professional profiles of users
3410
3455
3460
Update item C's rating/assessment, store back in database (per user if functions are customized by a user), and use for future searching and making suggestions for learning material

Figure 34

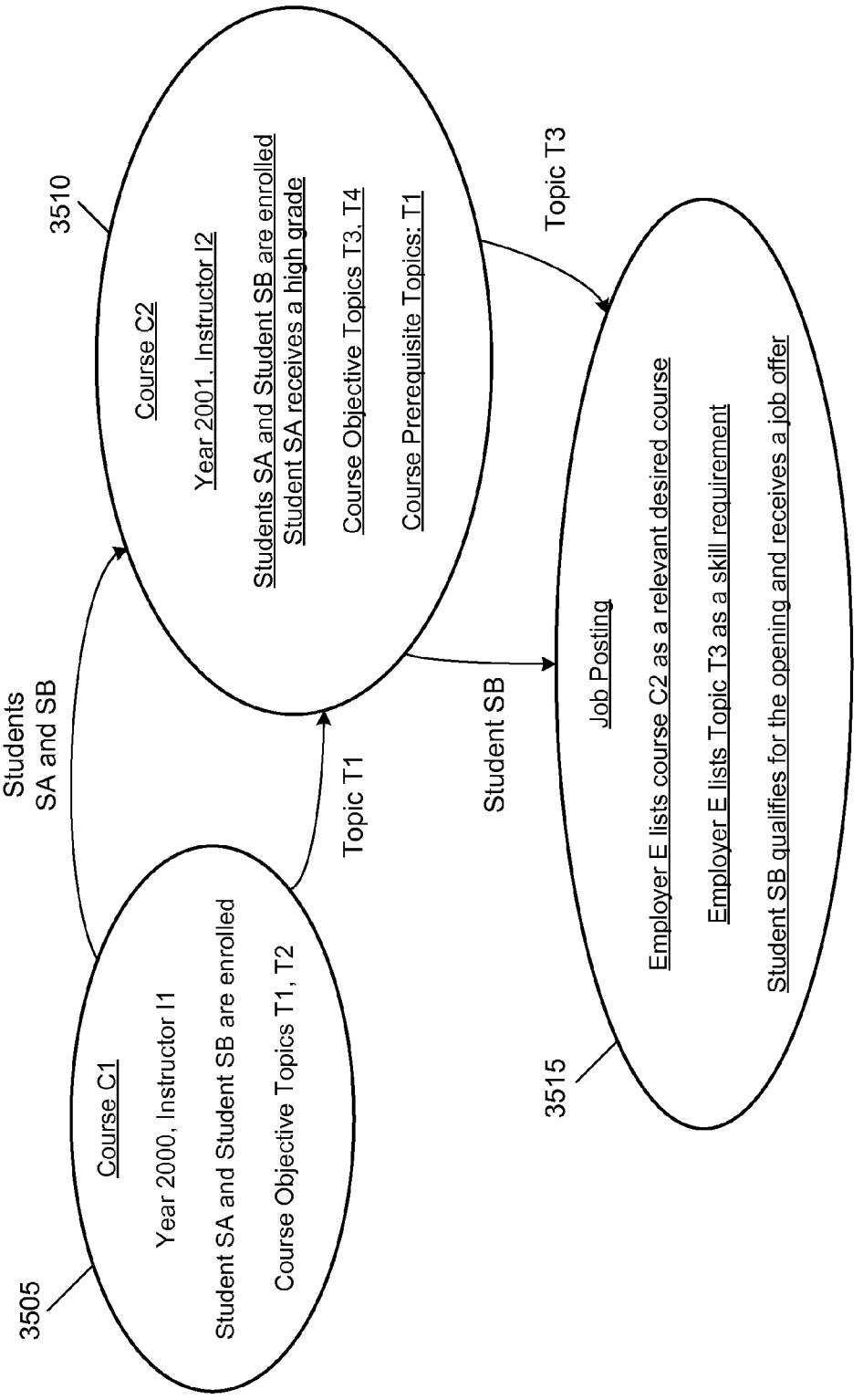

3505
Course C1
Year 2000, Instructor I1
Student SA and Student SB are enrolled
Course Objective Topics T1, T2
Students SA and SB
Topic T1
3510
Course C2
Year 2001, Instructor I2
Students SA and Student SB are enrolled
Student SA receives a high grade
Course Objective Topics T3, T4
Course Prerequisite Topics: T1
Student SB
Topic T3
3515
Job Posting
Employer E lists course C2 as a relevant desired course
Employer E lists Topic T3 as a skill requirement
Student SB qualifies for the opening and receives a job offer

Figure 35

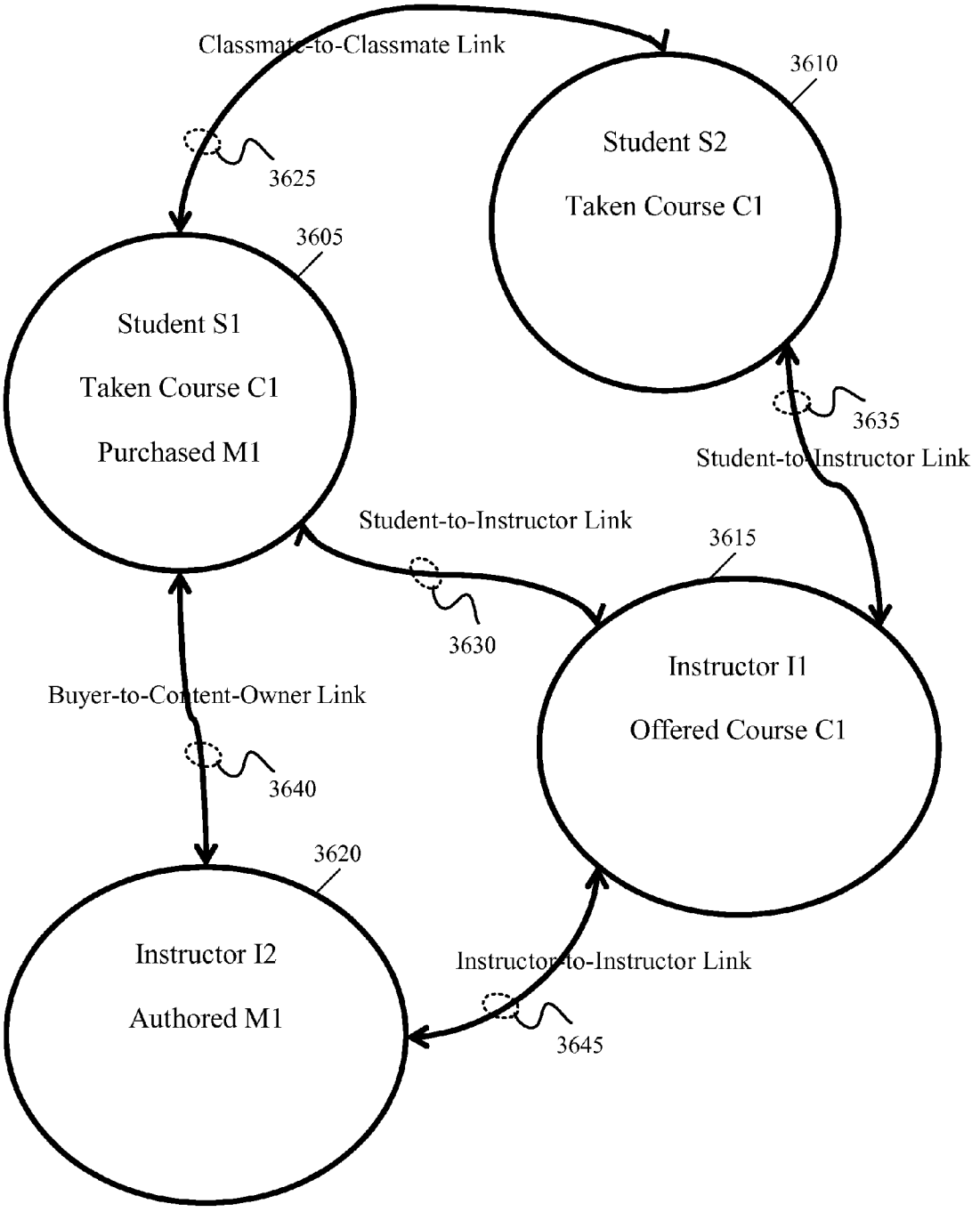

Classmate-to-Classmate Link
3610
Student S2
Taken Course C1
3625
3605
Student S1
Taken Course C1
Purchased M1
3635
Student-to-Instructor Link
Student-to-Instructor Link
3615
3630
Instructor I1
Offered Course C1
Buyer-to-Content-Owner Link
3640
3620
Instructor I2
Authored M1
Instructor-to-Instructor Link
3645

Figure 36

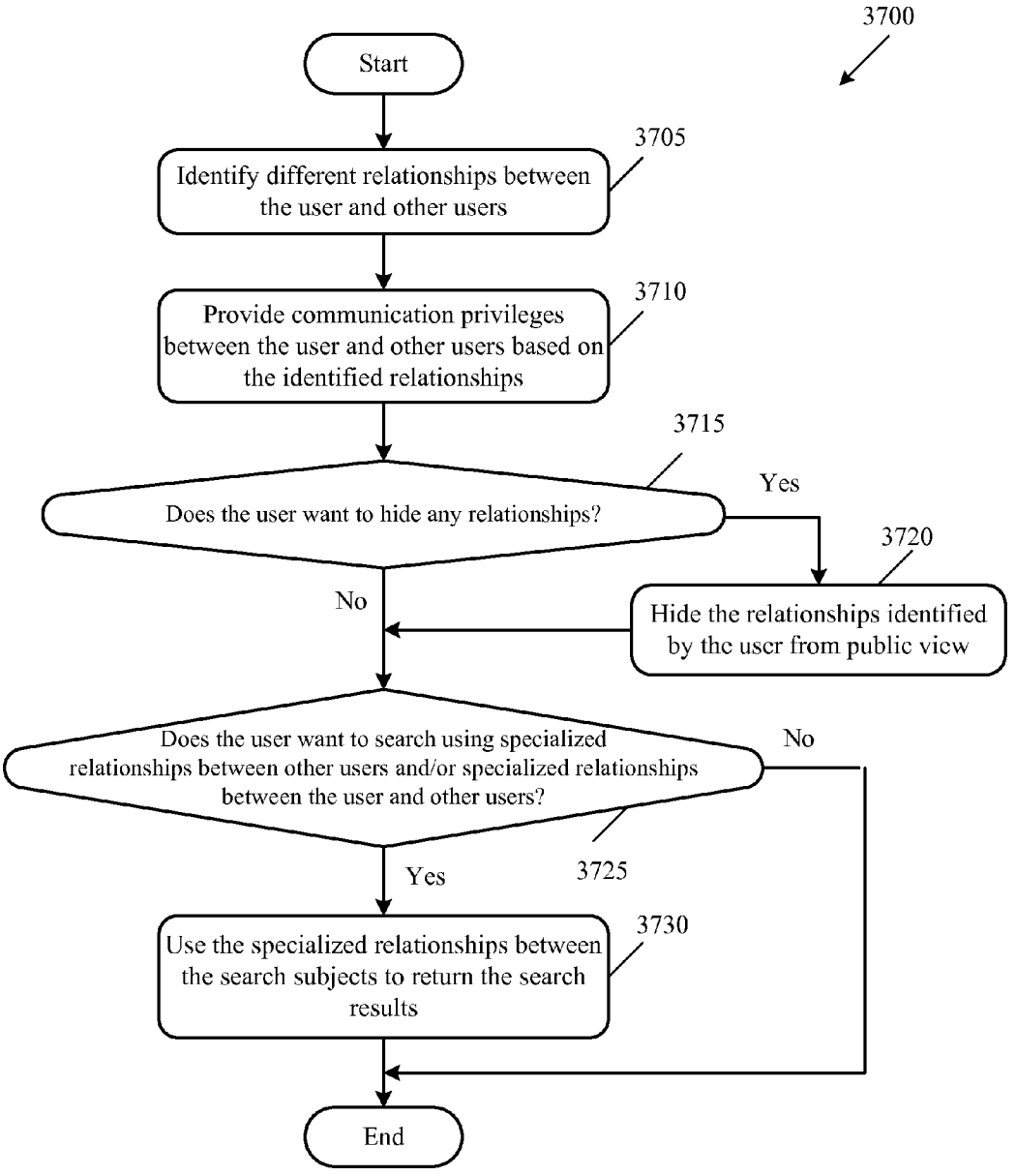

3700
Start
3705
Identify different relationships between the user and other users
3710
Provide communication privileges between the user and other users based on the identified relationships
3715
Does the user want to hide any relationships?
Yes
3720
Hide the relationships identified by the user from public view
No
Does the user want to search using specialized relationships between other users and/or specialized relationships between the user and other users?
No
Yes
3725
3730
Use the specialized relationships between the search subjects to return the search results
End

Figure 37

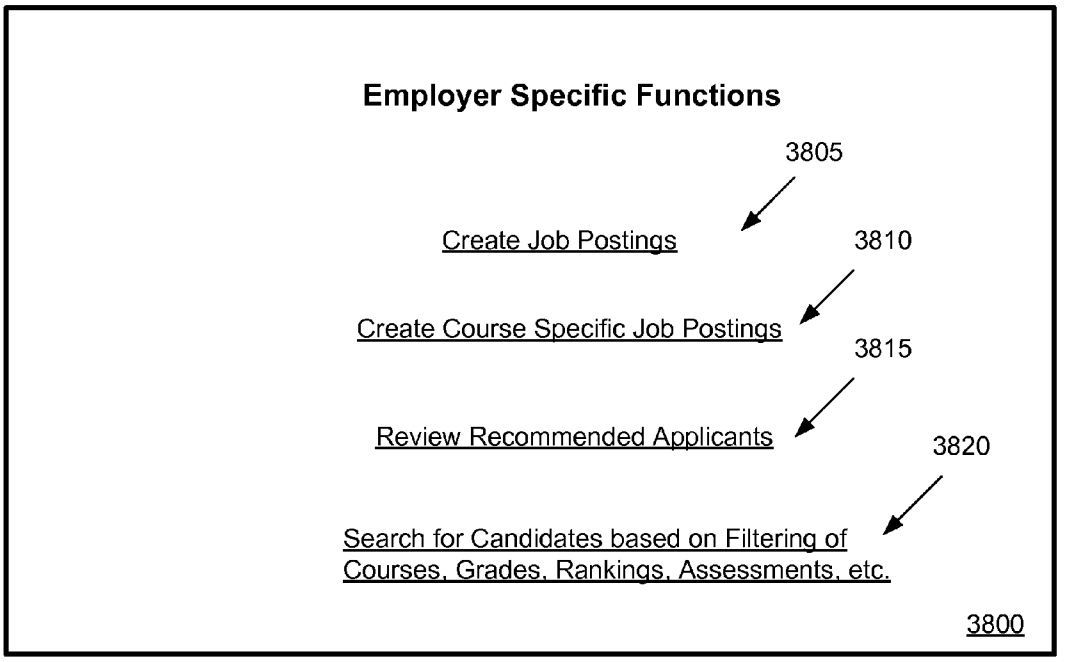

Employer Specific Functions
3805
Create Job Postings
3810
Create Course Specific Job Postings
3815
Review Recommended Applicants
3820
Search for Candidates based on Filtering of Courses, Grades, Rankings, Assessments, etc.
3800

Figure 38

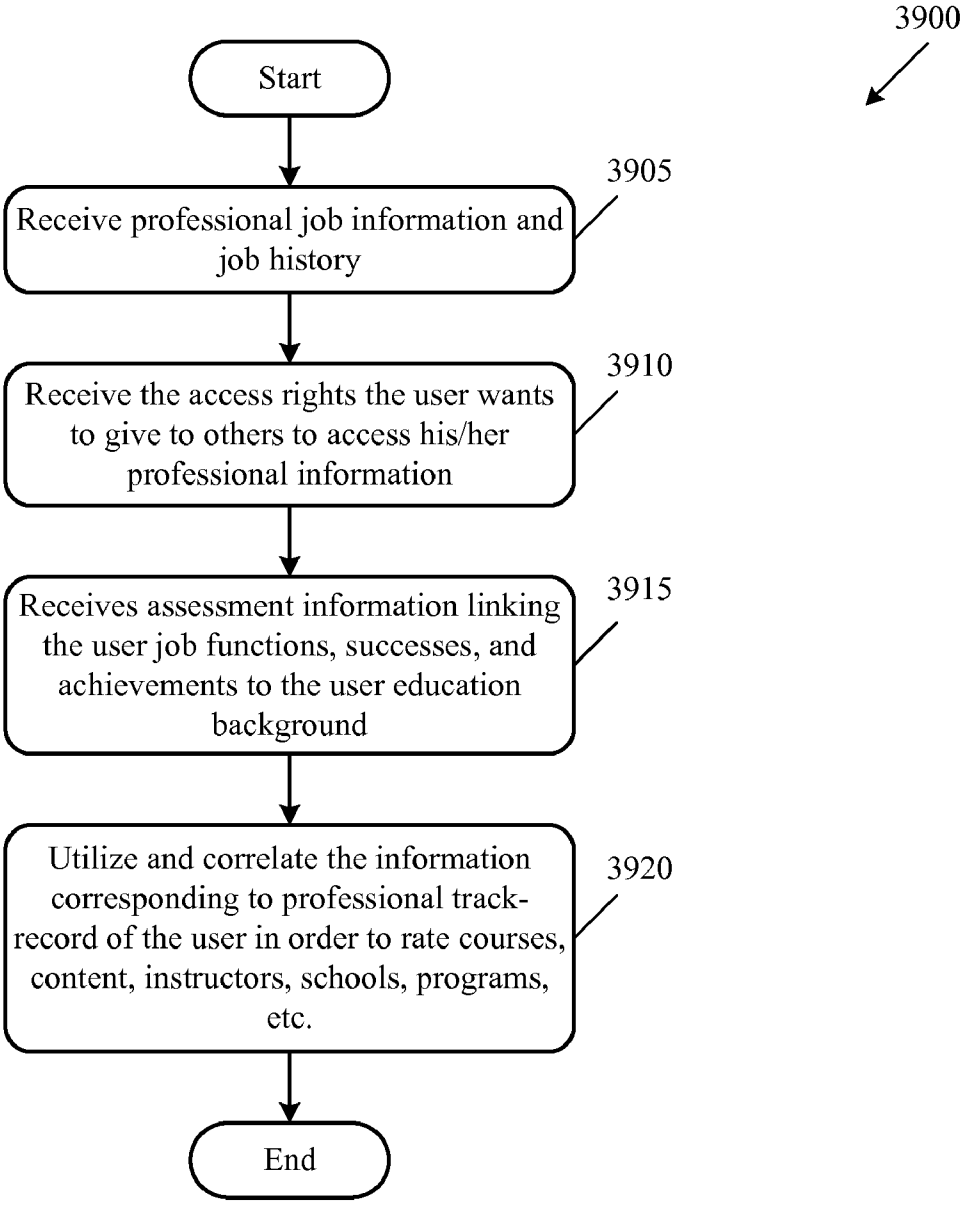

3900
Start
3905
Receive professional job information and job history
3910
Receive the access rights the user wants to give to others to access his/her professional information
3915
Receives assessment information linking the user job functions, successes, and achievements to the user education background
3920
Utilize and correlate the information corresponding to professional track-record of the user in order to rate courses, content, instructors, schools, programs, etc.
End

Figure 39

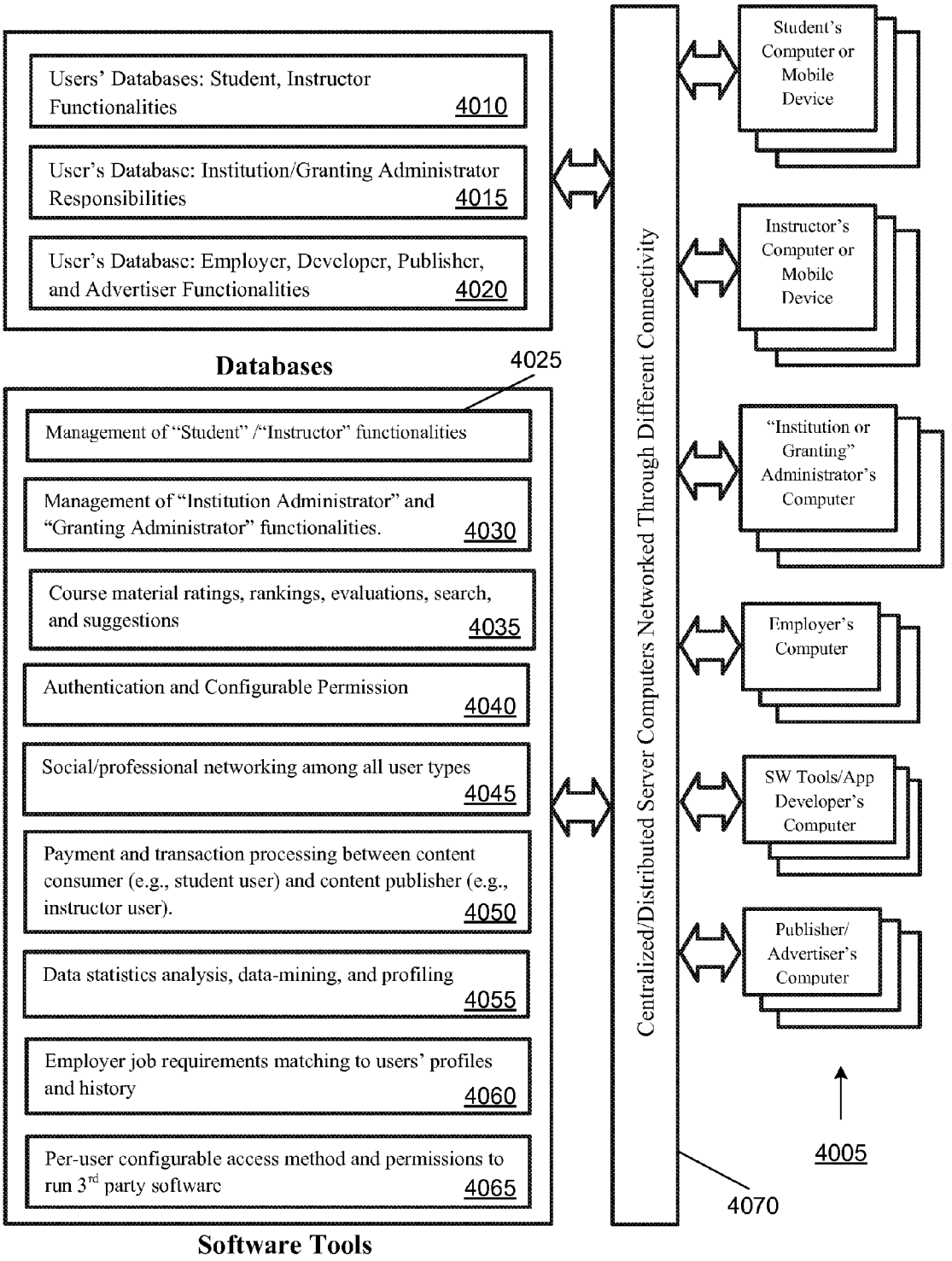

Users' Databases: Student, Instructor Functionalities 4010
User's Database: Institution/Granting Administrator Responsibilities 4015
User's Database: Employer, Developer, Publisher, and Advertiser Functionalities 4020
Databases
4025
Management of "Student" /"Instructor" functionalities
Management of "Institution Administrator" and "Granting Administrator" functionalities. 4030
Course material ratings, rankings, evaluations, search, and suggestions 4035
Authentication and Configurable Permission 4040
Social/professional networking among all user types 4045
Payment and transaction processing between content consumer (e.g., student user) and content publisher (e.g., instructor user). 4050
Data statistics analysis, data-mining, and profiling 4055
Employer job requirements matching to users' profiles and history 4060
Per-user configurable access method and permissions to run 3rd party software 4065
Software Tools
Centralized/Distributed Server Computers Networked Through Different Connectivity
Student's Computer or Mobile Device
Instructor's Computer or Mobile Device
"Institution or Granting" Administrator's Computer
Employer's Computer
SW Tools/App Developer's Computer
Publisher/ Advertiser's Computer
4005
4070

Figure 40

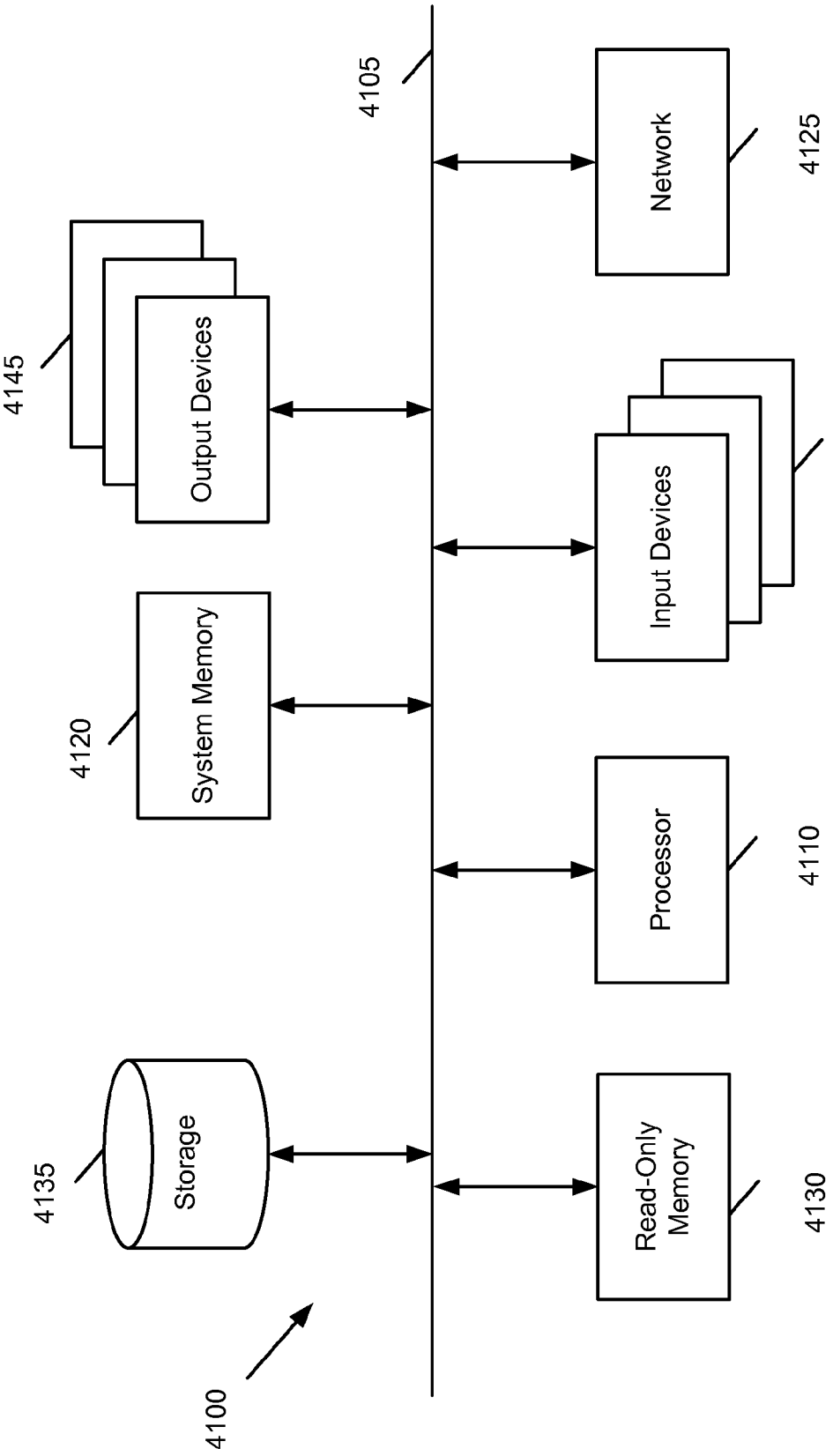

4105
Network
4125
4145
Output Devices
Input Devices
4140
System Memory
4120
Processor
4110
Storage
4135
Read-Only Memory
4130
4100

Figure 41

METHOD AND SYSTEM FOR SHARING AND NETWORKING IN LEARNING SYSTEMS

CLAIM OF BENEFIT TO PRIOR APPLICATIONS

[0001] The present Application claims the benefit of U.S. Provisional Patent Application 61/484,215, entitled, "Method and System for Sharing and Networking in Learning Systems," filed May 9, 2011. The present Application is also a continuation-in-part of U.S. patent application Ser. No. 13/419,414, entitled, "Method and System for Collaborative On-Line Learning Management with Educational Networking," filed Mar. 13, 2012. U.S. patent application Ser. No. 13/419,414 claims the befit of U.S. Provisional Patent Application 61/452,123, entitled, "Method and System for Collaborative On-Line Learning Management with Educational Networking," filed Mar. 13, 2011. U.S. patent application Ser. No. 13/419,414 also claims the benefit of U.S. Provisional Patent Application 61/484,215. The contents of U.S. Provisional Application 61/484,215 and U.S. patent application Ser. No. 13/419,414 are hereby incorporated by reference.

BACKGROUND

[0002] Learning management (including course material management) systems allow for instructors and students to interact and improve the learning experience and efficiency. Instructors are able to post course materials (i.e., handouts, notes, homework questions, solutions, exams, grading, etc.) and enrolled students can access and view relevant materials.

[0003] The existing systems are coordinated and offered through the educational institutions. Once a user is no longer affiliated with the institution (e.g., a teacher is no longer employed by the institution or a student is graduated), the user cannot continue interacting with the system. Furthermore, users not directly affiliated (or authorized) by the institution cannot access the system. The educational institutions acquire students to be accepted and registered with an institution in order for them to be able to use the online e-learning systems. For instance a student can have access to the e-learning system of a college only if he/she is a student of that college and also registered in a course. Even when a student is registered with a college and in a course and has access to the college e-learning system, the only instructors and courses the student can see, are the ones he/she is registered for.

[0004] Also, if a student is enrolled in several colleges, he/she would need different usernames and passwords to login to the e-learning system for each college. Unregistered individuals cannot have access to the system at all. Furthermore, in the existing e-learning systems students' access to the system is limited to a finite amount of time; e.g., three months after their courses end, or after graduation. Current e-learning systems are either affiliated to an institution or limited to specific subjects (e.g., cooking courses) or functionalities (e.g., providing ratings on instructors). As a result these systems do not have comprehensive databases on students, instructors, courses, materials, assignments, projects, job postings, career opportunities all in one place. Because of this shortcoming, current systems cannot provide statistical analysis and reports on educational issues using the necessary database.

[0005] The existing online learning system that are not affiliated with any institution do not work with degree awarding educational institutions such as schools, colleges and universities. These systems do not offer any procedures or techniques to explain any relation or handshaking with educational institutions. There existing systems do not utilize and connect database structures for instructors, students, administrators, grant administrators, courses, materials, software packages, reviews, rankings, employees and job listings from different institutions in one place.

BRIEF SUMMARY

[0006] Some embodiments of the present invention provide an online educational system which is operated (e.g., hosted, maintained) independent of the educational institutions. Users with different functionalities regardless of their affiliation with any institution sign up with the system and conduct their tasks. Users can have affiliations with multiple institutions, e.g., a student user can be registered in multiple courses offered in two different colleges. The student user uses the same account to access all his/her courses. Another example is an instructor user who teaches in two different institutions and still all his/her information and data are under one account in the system. In some embodiments of the invention, when users sign up with the disclosed system the users have access to all the available database including instructors, courses, materials, reviews, etc. The system uses an accessibility matrix to enable the users to manage the accessibility of their information. The users only need one username and password to sign in to the system. The users have access and can view all the courses they have taken at different years with different instructors in one place, under one account. All educational and career history of a user are stored and managed under one account.

[0007] Some embodiments do not require affiliation to join but provide mechanisms to add affiliations with one or more institutions if a user wishes to do so. For instance, a user first creates an account without any affiliations; the user then adds affiliation for himself/herself or for another user or for an offered course when (i) for course affiliation, a user creates a course under his/her account and assigns an affiliation to that course, however that affiliation only takes effect once confirmed by the administrator user for that institution; some embodiments allow a course to be affiliated with multiple institutions at the same time; some embodiments allow an affiliated course also be offered as unaffiliated course to users wishing to take the course without affiliation from any institutions (ii) the user is an instructor and is asked by an institution administrator to make that course affiliated to an institution (either exclusively or non-exclusively), (iii) a student or instructor user chooses to affiliate himself/herself explicitly to an institution, (iv) the system tracks the courses enrolled in by the student user and assumes affiliation between the user and all those institutions that the courses are affiliated with, (v) the user is a student and receives a request from institution administrator to grant request to either student's results in a particular course or the whole student account, (vi) the user is institution or grant administrator and either asks individual instructors or individual students for access authorization to affiliated courses, and (vii) the user is an instructor (unaffiliated with the institution) and adds or offers a course and signs up affiliated students to his/her course as a credit course towards those students' degrees (this is applicable, e.g., when degree-awarding institutions outsource offering and management of some courses to an outside instructor).

[0008] The preceding Summary is intended to serve as a brief introduction to some embodiments of the invention. It is

not meant to be an introduction or overview of all inventive subject matter disclosed in this document. The Detailed Description that follows and the Drawings that are referred to in the Detailed Description will further describe the embodiments described in the Summary as well as other embodiments. Accordingly, to understand all the embodiments described by this document, a full review of the Summary, Detailed Description and the Drawings is needed. Moreover, the claimed subject matters are not to be limited by the illustrative details in the Summary, Detailed Description and the Drawing, but rather are to be defined by the appended claims, because the claimed subject matters can be embodied in other specific forms without departing from the spirit of the subject matters.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The novel features of the invention are set forth in the appended claims. However, for purpose of explanation, several embodiments of the invention are set forth in the following figures.

[0010] FIG. **1** conceptually illustrates a sign up page in some embodiments of the invention.

[0011] FIG. **2** conceptually illustrates an exemplary registration page in some embodiments of the invention.

[0012] FIG. **3** conceptually illustrates an example of a page displayed on a user electronic device to allow a registered user to add different functionalities in some embodiments of the invention.

[0013] FIG. **4** conceptually illustrates examples of different functions that a user with student functionality can perform in some embodiments of the invention.

[0014] FIG. **5** conceptually illustrates the actions the student can perform after a course is selected from the list of ongoing courses in some embodiments of the invention.

[0015] FIG. **6** conceptually illustrates examples of the actions that a student can perform when the student selects a course from the list of the closed courses in FIG. **4**.

[0016] FIG. **7** conceptually illustrates a user interface that is provided in some embodiments of the invention after a student selects a link to request enrollment.

[0017] FIG. **8** conceptually illustrates a process in some embodiments of the invention for registering and providing services to a user who wishes to act as a student and signs up in courses.

[0018] FIG. **9** conceptually illustrates a user interface for signing up a student in a course in some embodiments of the invention.

[0019] FIG. **10** conceptually illustrates examples of different functions that a user with instructor functionality performs in some embodiments of the invention.

[0020] FIG. **11** conceptually illustrates the actions the instructor can perform after a course is selected from the list of ongoing courses.

[0021] FIG. **12** conceptually illustrates the actions the instructor can perform after a course is selected from the list of closed courses.

[0022] FIG. **13** conceptually illustrates a user interface for performing assessments management in some embodiments of the invention.

[0023] FIG. **14** conceptually illustrates a user interface for managing student enrollments and accesses in some embodiments of the invention.

[0024] FIG. **15** conceptually illustrates a user interface for material distribution and publishing in some embodiments of the invention.

[0025] FIG. **16** conceptually illustrates a process for registering and providing services to a user who wishes to act as an administrator or wishes to add administrator as an additional role.

[0026] FIG. **17** conceptually illustrates a process for adding parent functionality and getting access permission to a student information in some embodiments of the invention.

[0027] FIG. **18** conceptually illustrates a process for affiliating a course to one or more institutions in some embodiments of the invention.

[0028] FIG. **19** conceptually illustrates a process for affiliating one or more courses with a particular institution in some embodiments of the invention.

[0029] FIG. **20** conceptually illustrates a process for affiliating one or more users with a particular institution in some embodiments of the invention.

[0030] FIG. **21** conceptually illustrates a process for gaining access to a user information by another user.

[0031] FIG. **22** conceptually illustrates a process for automatically identifying affiliations in some embodiments of the invention.

[0032] FIG. **23** conceptually illustrates a user interface for accessing the published material in some embodiments of the invention.

[0033] FIG. **24** conceptually illustrates a user interface that is provided when a user selects the link to perform customized searches in some embodiments.

[0034] FIG. **25** conceptually illustrates a user interface that is provided for viewing course material reviews and ratings in some embodiments of the invention.

[0035] FIG. **26** conceptually illustrates a process for a user to publish course material to users outside a class in some embodiments of the invention.

[0036] FIG. **27** conceptually illustrates a process for a user to purchase content in some embodiments of the invention.

[0037] FIG. **28** conceptually illustrates a process for creating wish-lists and necessary-lists in some embodiments of the invention.

[0038] FIG. **29** conceptually illustrates a process for sharing, using, or re-using content by instructors in some embodiments of the invention.

[0039] FIG. **30** conceptually illustrates a process for creating content with multiple owners in some embodiments of the invention.

[0040] FIG. **31** conceptually illustrates a process for providing access to content for a user in some embodiments of the invention.

[0041] FIG. **32** conceptually illustrates a process for identifying similar and correlated items, providing suggestions, and performing searches based on the similarities and correlations.

[0042] FIG. **33** conceptually illustrates a process for providing specialized ranking and rating in some embodiments of the invention.

[0043] FIG. **34** conceptually illustrates an example of the flow for rating assessment of a content item in some embodiments of the invention.

[0044] FIG. **35** conceptually illustrates an example of how the interconnections between courses and job postings are used to improve course and instructor assessment accuracy in some embodiments of the invention.

[0045] FIG. **36** conceptually illustrates specialized networking features of some embodiments.

[0046] FIG. **37** conceptually illustrates a process for providing specialized networks in some embodiments of the invention.

[0047] FIG. **38** conceptually illustrates a user interface for providing functionalities specific to employers in some embodiments of the invention.

[0048] FIG. **39** conceptually illustrates a process for linking career and professional information with educational profiles in some embodiments of the invention.

[0049] FIG. **40** shows several examples of the software tools that are provided in some embodiments of the invention.

[0050] FIG. **41** conceptually illustrates an electronic system with which some embodiments of the invention are implemented.

DETAILED DESCRIPTION

[0051] In the following detailed description of the invention, numerous details, examples, and embodiments of the invention are set forth and described. However, it will be clear and apparent to one skilled in the art that the invention is not limited to the embodiments set forth and that the invention may be practiced without some of the specific details and examples discussed.

I. Overview

[0052] Some embodiments provide new database structures, features, and capabilities as well as new user roles and functionalities to improve the effectiveness of learning systems and to take the learning experience to new levels of interactivity and to enable new learning domains beyond the instructional environments associated with traditional schooling in schools, colleges, and universities. Some embodiments provide new networking and interaction capabilities among ordinary users, students, instructors, administrators, funding agencies, publishers, software vendors, and prospective employers, etc. Some embodiments provide statistical analysis and comparative studies utilizing the sophisticated and comprehensive database structures of the system.

[0053] Some embodiments of the present invention provide an online educational system which is operated (e.g., hosted, maintained) independent of the educational institutions. The disclosed online educational system is sometimes referred to in this specification as "the system" for brevity. Users with different functionalities regardless of their affiliation with any institution sign up with the system and conduct their tasks. Users can have affiliations with multiple institutions, e.g., a student user can be registered in multiple courses offered in two different colleges. The student user uses the same account to access all his/her courses. Another example is an instructor user who teaches in two different institutions and still all his/her information and data are under one account in the system. In some embodiments of the invention, when users sign up with the disclosed system the users have access to all the available database including instructors, courses, materials, reviews, etc. The system uses an accessibility matrix to enable the users to manage the accessibility of their information. The users only need one username and password to sign in to the system. The users have access and can view all the courses they have taken at different years with different instructors in one place, under one account. All educational and career history of a user are stored and managed under one account.

[0054] The functionality and management of the disclosed embodiments are separated and independent from any institution such that users can register with the system and create accounts regardless of their educational affiliations. However, the embodiments of the invention have the intelligence and the technology to connect and affiliate the users, courses and materials with those institutions whenever needed. Some embodiments also communicate with different educational institutions in order to exchange grades and evaluations.

[0055] In the existing prior art online (or e-learning) systems, students' access to the system is limited to a finite amount of time; e.g., three months after their courses end, or after graduation. However, in some embodiments of the present invention the users continue interacting with the system (and other system users through the provided networking tools) even after their enrollment ends with the educational institutions. The users have access to all the old courses, their materials, notes, grades, instructors' information and in general all their past educational and career activities. In addition to student and instructor users, some embodiments of the invention provide and support several additional functionalities and user types such as administrators, employers, publishers, software vendors, etc. Some embodiments provide specialized networking tools and integrated features to enable and improve interactions among all user types and functionalities.

[0056] Some embodiments provide an educational and learning management system that is not managed or hosted by individual educational institutions. Instead, the educational and learning management system is utilized as a platform to conduct educational and professional interactions in the context of education centric networking The need for any link to school database or any electronic handshaking with school database is eliminated for users who wish to use the system as unaffiliated users. Although the system eliminates all the needs for any affiliation with any institution in order to join and use the system, some embodiments provide the users (e.g., instructors) with the interface and electronic handshaking when a connection with an institution is desired. For instance, some embodiments provide an interface for instructors who wish to send the students' grades to an institution electronically. Although the system eliminates the need for affiliation in order to sign up and use the system as a user, the system provides tools and capabilities to exploit affiliations data when available for improved service and operation. These embodiments, register instructors and students without a need to have any link or electronic exchange with any universities software and database.

[0057] In the disclosed embodiments, a student user has access to much more information (content, courses, assessment results, reviews/ratings, customized suggestions, and customized networking/interactions with many different user roles such as instructors, employers, software vendors, publishers, etc., from multiple institutions as well as independent sources) than prior art systems. For instance, in some embodiments a student who is not registered in a course still can view: the course description, the instructor who is teaching it this semester and instructors who have taught the course before, the books assigned to the course, reviews and ratings of the books, the notes and other materials used in the course and their ratings (in order to have access to the content of the

material the student might need a permission from the material creator/instructor), a list of assignments and projects (the student cannot have access to the content until the student is registered in the course but the list shows what is covered in the course), ratings and reviews of the course, ratings and reviews of the instructor, any similar course taught in different institutions, list of job postings which have listed this course as their requirements, etc.

[0058] Some embodiments disclose an online learning management and networking system where: (i) students and instructors sign up and create accounts to manage their course materials, learning tools, and course grading independent of their affiliated institutions (e.g., managed, maintained, and hosted by the disclosed system), (ii) the disclosed system is utilized by different users with no coordination with respective educational institutions, (iii) in some embodiments, course enrollment is performed only with mutual interaction of instructor user and prospective student user, (iv) a student user requests the instructor of a course to submit a performance review/evaluation to the student's account (including grades and rankings), (v) the instructor configures the access by other users (enrolled and others) to his/her course material, (vi) the instructor user utilizes the systems' tools and network of users to publish and distribute the course material (e.g., course notes) among other users for free or for a fee, (vii) published course materials and notes are rated/evaluated by other student/instructor users based different criteria, (viii) students and instructor users form networks among themselves and conduct networking tasks by utilizing the educational information elements associated with a user's account.

[0059] All course information (course material, notes, grades, reviews, etc.) for student and instructor users are stored under the user's account created in some embodiments. A student user who is enrolling for a new course affiliated with any institution, uses the same account (e.g., the same username and password on the disclosed online learning system) to enroll in new courses. An instructor user who is offering a new course at any institution uses the same account (e.g., the same username and password on the disclosed online learning system) to offer and manage new courses. When users move from one institution to another, the users maintain the same account and access privileges in the disclosed online learning system. The online learning system and the associated software and databases are maintained, operated, and hosted on servers not affiliated with the educational institutions.

[0060] For course enrollment a student user sends a request for enrollment in a course to the instructor through the system. The instructor user then reviews and either confirms or rejects the enrollment request. The instructor can search for a student's account in the system and add the student to list of enrolled users. The instructor can add/remove/modify the list of enrolled students.

[0061] An instructor in some embodiments programs and configures the list of users (enrolled and others) who can have access to his/her past and current offered courses' material. An instructor can create sub-groups with access privilege to certain course material. For instance, an instructor can allow all students enrolled in certain courses to have access to his/her course material. An instructor can give full public access (i.e., to every registered user of the online learning system) to some his/her course material without requiring enrollment.

[0062] Some embodiments provide tools to request and/or gather reviews/comments/evaluations on a student's performance (by his/her instructors) or on an instructor's performance (by his/her students). These reviews are stored and are shared with other member types per account holder's authorization.

[0063] An instructor account in some embodiments publishes and/or distributes his/her course material utilizing the network of users of the online learning system. Such materials include course notes, book chapters, full text books, exam samples/solutions, software sample, video/audio clips, handouts, homework questions, solutions, examinations, etc. For-fee materials are published and offered based on per-item use or a flat-rate fixed monthly charge to access a set of material in some embodiments.

[0064] The disclosed system allows for rating and assessment of material by registered users (the users who have access to any material). The evaluations are linked and stored in association with the educational profile of the users placing the ratings.

[0065] The disclosed system allows for viewing and filtering of evaluation results (for available course material) based on different criteria, including assessments based only on reviews by instructor users, enrolled students in the course, all users, students from certain institutions, students with grades above a limit, student users in a certain percentile of their classes, etc.

[0066] Some embodiments provide material management and networking among users by exploiting users' educational profiles for improved networking capabilities and features. For a student user, this includes institutions attended, courses taken, course outcomes. For an instructor user, this includes institutions affiliated with, courses taught, published course material. The links between student and instructor users are utilized to improve the quality and usefulness of networking (social or professional) among users. The networking features include: (i) search capabilities for screening or finding users based on their educational profile, educational/history, or commonality between educational profiles, (ii) special networking among the participants of a course (e.g., enrolled students and the instructors), (iii) special networking capability among student users enrolled in similar courses offered by different instructors/institutions, (iv) special networking capability based on profiles/histories and/or commonalities between educational profiles, and (v) "special networking" including highlighted instant messaging through the system, highlighted email messages, ability to exchange course material, and hold online discussions.

[0067] In addition to student and instructor types, the disclosed system supports and enables different user types and functionalities including: "institution administrator", "grant administrator", "employer", "publisher", "software vendor", "advertiser", "parent", and "admission officer". Different account types functionalities can coexist under a single login account or can exist under separate login account.

[0068] Some embodiments support "institution administrator" and "grant administrator" functionalities where an "administrator" user sends requests to instructor users affiliated with the institution or who are offering courses while affiliated with the institution. For instance, a "grant administrator" user in some embodiments sends requests to affiliated instructor or student users (who have received grants, awards, funding) to gain access to certain data including enrollment statistics, assessment results, and course outcome. Once a

request by an "administrator" user is accepted by the instructors, the "administrator" user gains access to certain information related to an affiliated instructor/course including: (i) instructor's ratings/reviews by enrolled students, (ii) course outcome assessments by students (different assessment platforms). Similarly, the request for affiliation can be initiated by the instructors. "Administrator" users can create/port/implement/conduct new set of assessment platforms and questionners for an affiliated course by submitting them to enrolled students and observing the outcome (in addition to standard assessment platform).

[0069] Assessment platforms/questionnaires are developed and conducted by the "instructor" users, "institution administrator" users, "grants administrator" users, or are ported or copied from other similar or correlated courses offered by other instructors or institutions (as independent unbiased assessment). Some embodiments provide assessment analysis tools such as (i) performance tracking of an instructor over time and from course to course, (ii) comparison of an instructor's performance against other instructors with comparable offered courses, (iii) performance evaluation based on different assessment platforms, (iv) assessment based on course outcome and grades for different percentiles of enrolled students (top 10% of students, bottom 10% of students, etc.), (v) filter and categorize review and ratings assessment outcome based on rating students' course performance and history. Some embodiment allow for saving, storing, sharing, and emailing of the reports as authorized by effective permissions. The "administrator" user sees a list of all affiliated courses under his/her account. He/she can modify the list by sending requests to affiliated instructors. The "administrator" user can run comparative analysis among the affiliated courses and create cumulative and interdependent performance reports using the data from all affiliated instructors/courses.

[0070] The disclosed system maintains a history of student and instructor users' activities. For student users this history log includes the following information related to all past and current enrolled courses: course materials, affiliated institutions, grades, rankings, reviews and feedback by instructors. For instructor users this history log includes the following information related to all past and current offered courses: course materials, affiliated institutions, student reviews, assessments, course outcome, ratings of individual course notes. Users have full control on accessibility of their history information elements. The users configure the authorized users and determine the level and set of information available to other users.

[0071] Some embodiments provide data-mining and statistical analysis tools to apply on information elements related to a set of student and instructor users. Data-mining and statistical analysis tools cover features such as: (i) analyzing and categorizing users' profiles in terms of courses taken, technical expertise, skills, grades, rankings, potential future interests in courses and technical-notes, network of linked users, professional and educational trends of other users with common technical profiles, (ii) data-mining of reviews, assessments, ratings of all materials and instructors by other users to extract patterns and trends, and (iii) data-mining and pattern extraction of educational and professional moves by users of similar background/profile.

[0072] Some embodiments provide a customizable Application Programming Interface (API) where final grades and list of enrolled students are exchanged (submitted) with the database/servers of the corresponding educational institutions.

[0073] Some embodiments utilize methods for identifying and matching similar or relevant courses and course notes. This is done by calculating and updating "correlation matrices" showing the similarity and degree of correlation for material-to-course and material-to-material combinations. The disclosed system allows users to search, identify, and tag and link other course materials as relevant and suitable items for an enrolled course. The tagging information (identified and entered by users) is utilized by the system to improve the accuracy of "correlation matrices". This is then used to improve the accuracy of course material searching and suggestions.

[0074] Some embodiments provide customized search capability that is tuned towards the user's profile and history. Some embodiments provide suggestions to users (students or instructors) on potential helpful course materials that may help/interest them based on analyzing their educational profiles and history.

[0075] Some embodiments implement an account functionality/type referred to as "employer". This functionality is deployed by recruiters and prospective employers of students and instructors. This includes: posting job requirements, delivering job postings to relevant targeted users based on their educational profiles, utilizing the system databases and links to assess the quality of potential candidates.

[0076] Some embodiments provide job requirement matching capability based on users' professional and educational profiles and history. This matching includes: (i) associating a job posting requirements with technical background/expertise in terms of courses taken, level of success in certain courses, evaluations/assessments, (ii) associating a job posting requirements with level of success in certain independent examination tests administered by the disclosed system, and (iii) associating a job requirement matching based on similarity and correlation of a user's technical and professional background against those of some "reference" users. Based on level of a job requirement matching, a job posting is delivered to targeted qualified users (potential candidates) and the prospective employer is notified of the level of matching of each candidate based on all above analysis.

[0077] Some embodiments allow an employer to create detailed job posting requirements based on courses taken, grades and rankings, assessment by certain instructors, and desired technical skills (which are then mapped and translated to a list of courses). The employers provide feedback to the system on their assessment of their past hires through the disclosed system (level of satisfaction) to enable the system to improve future matches or suggestions. The disclosed system analyses job postings and trends by employers (and their technical requirements) to provide feedback to student users to adjust and optimize their educational direction and profile (e.g., to suggest courses, technical skills, extension courses, etc.). Different fee charging models are supported and offered to prospective employers for allowing them to utilize the system for delivering job posting and targeting and attracting relevant candidates. An employer can add or define job posting requirements based on grading (level of success, ranking, etc.) of students in certain courses. These courses can be either institutional courses or exam-type courses.

[0078] Some embodiments provide an account functionality for software vendors and developers for: (i) presenting and

marketing their software tools and features to relevant and targeted users and (ii) allowing selected set of users (e.g., enrolled in certain courses) to access and run vendor software remotely (for free or discounted price) on local or remote servers. The system allows for users to store their source codes under their login accounts with the system. Software vendors can offer free access to students that are enrolled in certain relevant courses for the duration of those courses. Alternatively, software vendors can give limited access to students to only run sample source codes provided by instructors. Fee based access can be offered to students over periods of month, semester, year, etc. The disclosed system allows for linking vendor software access to job posting requirements. A software vendor can allow users to access, practice, and train for using a software tool in connection to a job posting requirement. The disclosed system enables software vendors to create training courses (for their tools) along with course notes, exams, grading, and mutual assessments. These training courses are then associated and linked to other courses offered by institutional instructors.

[0079] Some embodiments provide a payment processing and delivery tool between content consumers (e.g., a student user) and content providers (e.g., an instructor user, publishing company, software vendors, etc.). Payment scenarios supported includes per-item charging or flat-monthly charging.

[0080] Some embodiments provide different access permission configurations including: (i) permissions to enrolled student users by an instructor user to access course materials, (ii) permissions to "institution" or "grant administrator" users by affiliated instructor users to access evaluation/assessment/outcome data, (iii) customizable permissions to published items (e.g., only students enrolled in courses math **101** and algebra **101** are given access to math **201** course material by its instructor), (iv) permissions by a student user to another user (e.g., prospective employers, admissions offices, research advisors) to access his/her academic history (e.g., courses taken, grades, rankings, evaluations/comments by instructors), (v) permissions by an instructor user to another user (e.g., prospective students, prospective hiring schools) to access his/her academic history (e.g., courses offered, course material, rankings/ratings, assessments, course outcomes, evaluation and comments by students), and (vi) customizable permissions by software vendors to allows users to access and run their software offerings (e.g., give special permissions to users in certain geographical regions or students enrolled in certain courses).

[0081] The disclosed system can be utilized for different categories of educational institutions (e.g., K-12, high-school, college, medical schools, graduate schools, specialized schools, training schools, company sponsored training courses, extension programs, etc.).

[0082] The disclosed system enables independent instructors (with no institutional affiliation) to create courses, market their courses, enroll students, hold exams, and provide grading and feedbacks.

[0083] "Publisher" users in some embodiments market and distribute their textbooks and textbook chapters by matching/associating them with offered courses. Ratings by users and recommendations by instructors are collected to rate and evaluate textbooks and textbook chapters.

[0084] An instructor can create a course in some embodiments that only includes evaluation exam and grading. Such courses are intended primarily for evaluating students in a specific topic and providing grading, evaluation, ranking to the students. Students consequently share the outcome with prospective instructors, employers, schools.

[0085] Some embodiments include advertisement and discount matching and delivery system where: (i) users' educational profiles are analyzed for targeted advertisement and discounting (including: institutions enrolled with, courses taken, educational focus, background, academic field), and (ii) software tools and other products (e.g., computers) linked/associated to courses by instructors/vendors as required/desired items for courses are advertised and marketed to matching enrolled students.

II. Account Creation and Accessing the Learning Services

[0086] Users with one or more roles such as student, instructor, vendor, etc., sign up and use the learning services in some embodiments of the invention without a need to be affiliated with any institutions. This is in contrast with prior art e-learning systems affiliated with educational institutions such as high schools, colleges and universities which require students to be accepted and registered with a particular institution in order to have access to the particular school's e-learning system.

[0087] In some embodiments, a user signs up and creates an account with the system. As part of the sign up process, the user selects a unique username and password to access his/her account. The account creation and maintenance is performed independent of any institutions that the user might be affiliated with. For instance, when a user logins to his/her account with the disclosed system, the system allows the user to access all course materials related to his/her past and current courses. When the user moves from an institution to another one, he/she can choose to maintain the same account and access privileges.

[0088] Some embodiments provide an online or web interface for interacting with users. The web interface in some embodiments is provided by one or more servers accessible to users through a network such as the Internet. Users utilize their electronic devices (such as computers, tablets, smart phones, personal digital assistants (PDAs), etc.) and utilize browsers or other software applications to access the web interface. In the following sections, several examples of web pages are described that enable the users to access and utilize the services of different embodiments of the invention. A person of ordinary skill in the art would realize that the invention is not limited to the specific details given in these examples.

[0089] FIG. **1** conceptually illustrates a sign up page **100** in some embodiments of the invention. This is a page that is displayed on a user's electronic device after the user accesses a web address associated with the e-learning system of some embodiments. As shown, existing users are required to enter their unique user name **105** and password **110** to access the system. Other embodiments allow other methods of user authentication such as the use of biometrics readers or electronic password identification generators. As shown, a user that is not a registered member is invited to create an account by selecting a button **115**.

[0090] FIG. **2** conceptually illustrates an exemplary registration page **200** in some embodiments of the invention. As shown, a new user is simply required to select a unique user name **205** and password **210**, enter some personal information such as name, address, email, phone number, gender, birthday, etc., and select a button **215** in order to register with the system. Additional information such as language prefer-

ence, a visual code to ensure a human is creating the account, etc., are required in some embodiments to facilitate creation of the account.

[0091] Once a user registers for the first time or logs in as an existing user, the user is provided with tools to add different functionalities in the system. FIG. **3** conceptually illustrates an example of page **300** displayed on a user electronic device that allows a registered user to add different functionalities. The user interface shown in FIG. **3** illustrates instructor **305**, student **310**, institution administrator **315**, grant administrator **320**, admission officer **325**, employer **330**, publisher **335**, advertiser **340**, software developer/vendor **345**, and parent **350** functionalities as examples of functionalities that a user can add to his/her account profile. In some embodiments, a registered user can add several different functionalities. For instance, the same user can have instructor and student functionalities. Since the system stores selected user functionalities, some embodiments only display the functionalities that a user has not yet added to his/her profile. Other embodiments display all possible functionalities and allow the user to remove an existing functionality.

[0092] Some embodiments include and maintain a database of all educational institutions (with sub-divisions within an institution (for example Physics Department of USC). In some embodiments when a user signs up with the system, as part of profile creation process, he/she can enter an affiliation or group of affiliations. The user can change this affiliation over time as needed. In the case of instructor functionality, the user can assign affiliation separately for each course being created. If an instructor user adds multiple courses with different affiliation, the user is then affiliated with multiple institutions for that period of time. Furthermore, when the user is not affiliated with any institution the user can choose "non-affiliated" status. This status is used when a user wants to offer a course through the system as an "independent instructor". Users are given the option to display or hide their affiliation in their profiles. In some embodiments, the system tracks users' affiliations and automatically extracts and utilizes the affiliation data for improved operation and interaction amongst users.

[0093] Some embodiments do not require affiliation to join but provide mechanisms to add affiliations with one or more institutions if a user wishes to do so. For instance, a user first creates an account without any affiliations; the user then adds affiliation for himself/herself or for another user or for an offered course when (i) for course affiliation, a user creates a course under his/her account and assigns an affiliation to that course, however that affiliation only takes effect once confirmed by the administrator user for that institution; some embodiments allow a course to be affiliated with multiple institutions at the same time; some embodiments allow an affiliated course also be offered as unaffiliated course to users wishing to take the course without affiliation from any institutions (ii) the user is an instructor and is asked by an institution administrator to make that course affiliated to an institution (either exclusively or non-exclusively), (iii) a student or instructor user chooses to affiliate himself/herself explicitly to an institution, (iv) the system tracks the courses enrolled in by the student user and assumes affiliation between the user and all those institutions that the courses are affiliated with, (v) the user is a student and receives a request from institution administrator to grant request to either student's results in a particular course or the whole student account, (vi) the user is institution or grant administrator and either asks individual instructors or individual students for access authorization to affiliated courses, and (vii) the user is an instructor (unaffiliated with the institution) and adds or offers a course and signs up affiliated students to his/her course as a credit course towards those students' degrees (this is applicable, e.g., when degree-awarding institutions outsource offering and management of some courses to an outside instructor). These and other scenarios are described by reference to FIGS. **18-22** below.

[0094] Some embodiments provide the users with several different types of signing up for a course: as enrolled student user, as auditing student user, and as observing user. The instructor configures the level of access for each type. For instance: (i) enrolled students get access to full course material. The emails and messages from an enrolled student user get highlighted in instructor's mailbox. Enrolled students get theirs homework, projects, exams graded and receive a final grade and certification for the course, (ii) auditing students get access to course notes, but may not access homework solutions or submit their homework. An auditing student gets limited interaction privileges with the instructor as configured by the instructor, and (iii) observing students only get access to course notes with limited or no interactions with the instructor.

[0095] A. Different User Roles

[0096] 1. Student Role

[0097] A user who wishes to be a student, registers and creates an account with the system (e.g., by using steps described by reference to FIGS. **1** and **2**). As part of the sign up process, the student selects a unique username and password to access his/her account with the system. Once the user is registered, the user can add student functionality (e.g., by the user selects functionality **310** in FIG. **3**). In some embodiments, the account creation and interaction with the system is performed independent of the institution that the student might be currently enrolled with.

[0098] When a student logs into his/her existing account with the disclosed system, the system allows the student to access all course materials related to his/her past and current enrolled classes. Since the system is not affiliated with any institution, when a student moves from an institution to another, the student can choose to maintain the same account and access privileges.

[0099] Once the user adds student functionality, the user is provided with a set of functions to perform in student role. FIG. **4** conceptually illustrates examples of different functions that a user with student functionality performs in some embodiments of the invention. As shown, the user is provided with a list **405** of the ongoing courses that the user has signed up with. In this example, the ongoing courses are math **101** and chemistry **201**. The student also has access to the closed courses **410** which the student had taken before. In this example, the closed courses are chemistry **101** and **102**. The student also can request to enroll in new courses by following the link **415**. The student can search for other users such as instructors, students, employers, advertisers, etc., by following link **420** and send them connection request. In this way, student user creates networking links with other users regardless of their user type and affiliations. The student searches for materials, homework, assignments, projects, any merchandise offered by vendors, etc., by following link **425**. The student can search for reviews, rankings, statistical analysis, and reports by following link **430**. The student can also search

for jobs by following the link **435** or to request for admission from one or more institutions by following link **440**.

[0100] FIG. **5** conceptually illustrates the actions the student can perform after math **101** is selected from the list of ongoing courses **405**. As shown, several links **505-545** respectively allow the student to access the course material, interact with the instructor and other students taking math **101**, assess the instructor, assess the course and notes, remotely access available software tools, search for relevant material, view suggested material and saved items, and request assessment and review from the instructor.

[0101] At the end of a course, a student can request the instructor (e.g., by selecting link **540**) to submit a performance review, evaluation, and/or recommendation to the student's account. This review can include student's grades and rankings in the course. The system would then store those reviews and disclose them to any other account holder in the future per student's request and authorization. The user is provided with the option (e.g., by selecting link **545**) to determine whether the results of the course or the instructor's assessments, reviews, recommendations, etc., are to be visible to everyone, to one or more groups of users, to users who meet certain criteria, or one or more particular users. In contrast to prior art systems, the embodiments of the present invention gather all grades, rankings, and reviews of a student from different courses taken in affiliation with different institutions in one place. The student user cannot change the grades, rankings, and the content of the reviews and evaluations. However, the student controls the visibility of this information.

[0102] Similarly, selecting a closed course displays a list of actions that the student can perform. FIG. **6** conceptually illustrates examples of the actions that a student can perform when the student selects chemistry **102** from the list **410** of the closed courses in FIG. **4**. As shown, several links **605-630** respectively allow the student to access the course material, interact with the instructor and other students that had taken chemistry **102** at that time (the user can network, interact, email to old classmates through this feature), assess the instructor, assess the course and notes, and request assessment, review, and/or recommendation from the instructor. The user can determine (e.g., by selecting link **630**) whether the results of the course or the instructor's assessments, reviews, recommendations, etc. are to be visible to everyone, to one or more groups of users, to users who meet certain criteria, or one or more particular users.

[0103] Also if the student had enrolled in the course many years ago, some embodiments enable the student to still send a request to the instructor to ask for access to the latest and updated material. For instance, a student user enrolled in a course many years ago (e.g., five, ten, or more), automatically maintains full access to all course material as it was during the enrollment for as long as the user is registered and active with the system. However, if the same course is offered by the same instructor now (e.g., five years later), the student user is given the option to request to gain access to the latest content (notes, homework, etc.). The instructor receives the request and decides whether to approve or reject the request. If approved, the student user sees two sections or tabs under the course that he/she took five years ago. One tab contains the full course material and content snapshot as it was five years ago (archived course notes, homework and solutions, project, forum discussions, and all student user's electronic submissions of homework and project returns). Another tab contains the course material as is in the latest offering of the course (notes, homework assignments, and homework solutions; but obviously without any homework submissions since the student is not enrolled in the latest offering of the course). The "common root" concept described further below is utilized as well for the implementation of this feature. If a student took a course five years ago, the student can still submit a request to have access to latest content of courses with "common root". Since information about the student is saved, some embodiments do not display links **615-625** once the student has performed those operations.

[0104] FIG. **7** conceptually illustrates a user interface that is provided in some embodiments of the invention after a student selects link **415** to request enrollment. As shown, the user can enter several search criteria **705-715** such as course title, instructor name, course instructor assessment results, course material assessment results, etc. A search is performed once the search button **720** is selected. Once the student identifies a desired course, the student can register in the course as described in further detail below.

[0105] FIG. **8** conceptually illustrates a process **800** for registering and providing services to a user who wishes to act as a student and enroll in courses in some embodiments of the invention. As shown, the process determines (at **805**) whether the user has an existing account (e.g., as described by reference to FIG. **1**). When the user already has an account, the process proceeds to **815** which is described below. Otherwise, the process creates (at **810**) a new account for the user based on a unique user name and a password selected by the user (e.g., as described by reference to FIG. **2**).

[0106] Next, the process logs in (at **815**) the user. The process then adds (at **820**) student functionality to the user account (e.g., as described by reference to FIG. **3**). For a user that has previously added the student functionality, the process in some embodiments skips operation **820**.

[0107] The process then determines (at **825**) whether the user wants to sign up in a course. When the user does not want to sign up in a course, the process proceeds to **865** which is described below. Otherwise, the process determines (at **830**) whether the user wants to internally request course enrollment from an instructor. If not, the process proceeds to **835** which is described below. Otherwise, the process in some embodiments assists the user to selects courses and instructors that the user wants to enroll. As shown, the process receives (at **840**) search criteria (e.g., through a user interface such as the interface described by reference to FIG. **7**) for course and/or instructors that the student wants to enroll. The process then searches the system databases and provides (at **845**) search results to the user based on the received criteria.

[0108] A student user has several options for signing up in a course in some embodiments. FIG. **9** conceptually illustrates a user interface for adding a student to a class in some embodiments of the invention. As shown, once the user identifies a course to register (in this example, American history **201** for spring 2012), the student is given several options for signing up in the course: as an enrolled student user (link **905**), as an auditing student user (link **910**), and as observing student user (link **915**). The student selects one of the options and selects button **920** to send a request through the system to the instructor for signing up in the course. Referring back to FIG. **8**, the process sends (at **850**) a sign up request (e.g., after receiving selection of button **920**) to the instructor to request enrollment to a course selected by the student. The process then proceeds to **855** which is described below.

[0109] When the user decides to directly (i.e., without using the system's internal messaging mechanisms) contact the instructor, the process in some embodiments provides (at **835**) instructions to the user to directly contact an instructor (e.g., through email) to send an enrollment request along with other required information such as student's user account information (e.g., account username), course information, date and time of the course, etc., to enroll in the course.

[0110] Once the instructor receives the request, the instructor configures the level of access for each type. For instance: (i) enrolled student get access to full course material. The emails and messages from an enrolled student user get highlighted in instructor's mailbox. Enrolled students get theirs homework, projects, exams graded and receive a final grade and certification for the course, (ii) auditing students get access to course notes, but may not access homework solutions or submit their homework. An auditing student gets limited interaction privileges with the instructor as configured by the instructor, and (iii) observing students may only get access to course notes with limited or no interactions with the instructor.

[0111] At **855**, process **800** determines whether sign up permission is received from the instructor. If not, the process proceeds to **825** which was described above. Otherwise, the process signs up (at **860**) the student in the requested course. The process then allows (at **865**) access to material for the registered courses based on an access matrix set by the instructor. The process then exits.

[0112] In some embodiments, instructor student relation has several different levels, each level has specific grading, material visibility and communication privileges: (i) students that are a member of an educational institution offering a course and enrolled in that specific course (ii) students who are taking the course without being enrolled with an affiliated institution, (iii) auditing students who get access to course notes and either have no access to homeworks or cannot submit the homeworks, and (iv) observers (described further below) who only want to access course material. Students can add or audit a course without school intervention by just getting the instructor's approval. The student submits a request to the instructor. The student chooses any of the above applicable levels for sign up and the instructor can approve and designate one of the levels.

[0113] As described above, a student has the option to fully enroll, audit, or observe a course. Each one of these sign up types provides the student with different levels of access to the instructor and course material. For instance, the observer sign up type is utilized by a person who only wants to request access or to gain access to materials available publicly through the system. This observer sign up type has limited functionality. For instance, former students who no longer are enrolled in any courses can utilize this account type. Similarly, when a user is not enrolled in a course but wants to access the course material for personal usage and with limited privileges, he/she signs up as observer to request access to a course and get a limited access to material.

[0114] In prior art systems, students usually lose their privileges and access to the system when they are not registered in a class anymore. However, in some embodiments of the present invention any individual can create an account (or keep his/her account) and use the system even if he/she was previously affiliated with an institution when the user was taking courses on the online learning system but the user is not a student anymore and is no longer affiliated to an institution. A user can even register in a class (with the instructor's permission) as an observer with different access privileges than an enrolled or auditing student. A user student (when enrolled in a course in the past), can still access his/her account after graduation and access all the course material (including reviews) taken in the past. If a user wants to access a course but never was a student in that course, the user can still request limited access in an observer role.

[0115] 2. Instructor Role

[0116] Some embodiments allow individual users unaffiliated with any educational institution to create accounts with instructor functionality. These accounts utilize the same learning management capabilities as school-affiliated instructors. These accounts are used for various other courses offered by ordinary individuals and/or non-educational institutions in some embodiments. The course marketing, offering, material distribution, grading, certification, fee-collection (if applicable), and evaluation are all managed by the disclosed system in some embodiments.

[0117] A user who wishes to act as an instructor registers and creates an account with the provided system (e.g., by using steps described by reference to FIGS. **1** and **2**). As part of sign up process, the instructor selects a unique username and password to access his/her account. In some embodiments, the account creation and maintenance is performed independent of any institutions that the instructor is affiliated with. Once the user is registered, the user can add instructor functionality (e.g., by functionality **305** in FIG. **3**).

[0118] When an instructor logins to his/her existing account with the disclosed system, the instructor can access and manage all course materials related to past and current courses taught in different institutions through the online learning system. When an instructor moves from an institution to another one, he/she maintains the same account and access privileges. An instructor can view and have access to his/her past and present students accounts, other instructors, publishers, software providers and any other user. He/she can utilize the available database to extract necessary data. For instance an instructor can find the top 1% instructors in his/her field with outstanding course materials and offer them a cooperation to create an educational package.

[0119] FIG. **10** conceptually illustrates examples of different functions that a user with instructor functionality can perform in some embodiments of the invention. As shown, the user is provided with a list **1005** of the ongoing courses that the user is teaching. In this example, the ongoing courses are calculus **301** and algebra **201**. The instructor also has access to the closed courses **1010** which the instructor had taught before. In this example, the closed courses are physics **101** and **102**. The instructor also performs assessment management, manages student enrollment and accesses, submits grades to institutions by using application programming interfaces (APIs), and performs material distribution and publishing by following links **1015-1030** respectively.

[0120] The instructor can also search for other users such as instructors, students, employers, advertisers, etc., by following link **1035** and sending them connection request. In this way, the instructor user creates networking links with other users regardless of their user type and affiliations. The instructor searches for materials, homework and assignments offered by other instructors, projects, any merchandise offered by vendors, etc., by following link **1040**. The instructor searches for reviews, rankings, statistical analysis, and

reports by following link **1045**. The instructor also searches for jobs by following the link **1050**.

[0121] FIG. **11** conceptually illustrates the actions the instructor can perform after calculus **301** is selected from the list of ongoing courses **1005**. As shown, several links **1105**-**1125** allow the instructor to access the latest course material (link **1105**), suggest or link to relevant material posted by others (link **1110**), interact with students taking calculus **301** (link **1115**), interact with software vendor users (link **1120**), or view previous versions of the course material (link **1125**).

[0122] FIG. **12** conceptually illustrates the actions the instructor can perform after physics **101** is selected from the list of closed courses **1010**. As shown, several links **1205**-**1225** allow the instructor to access the latest version of the course material (link **1205**), interact with former students who took physics **101** (link **1210**), review student's assessment of the course instructor (link **1215**), review course and notes assessments (link **1220**) or view previous versions of the course material (link **1225**).

[0123] FIG. **13** conceptually illustrates a user interface for performing assessments management in some embodiments of the invention. As shown, the instructor can interact with institution administrators and grant administrators. The instructor can allow viewing of ongoing courses' assessments and outcome, grades distributions, assessment templates filled out by students, statistical analysis on assessment returns, (link **1310**) or allow viewing of the closed courses' assessments, grades distributions, assessment templates filled out by students, statistical analysis on assessment returns (link **1315**). The instructor can also utilize a set of assessment tools **1320**. In the example of FIG. **13**, the instructor can create assessment templates (link **1325**) or import assessment templates, e.g., from other similar courses or from institution or grant administrators (link **1330**).

[0124] FIG. **14** conceptually illustrates a user interface for managing student enrollments and accesses in some embodiments of the invention. As shown, the instructor has full control for adding and removing students from courses taught by the instructor. The instructor selects link **1405** and is able to review the list of users (e.g., enrolled students, auditing students, observers) currently enrolled in each course taught by the instructor, add new students or observers who have requested to be registered, remove enrolled users, and change users accesses privileges to different course materials.

[0125] FIG. **15** conceptually illustrates a user interface for material distribution and publishing in some embodiments of the invention. This interface is used by any user such as instructors, students, publishers who want to publish material. As shown, the user publishes material, e.g., for fee or for free (link **1505**), views statistics on accesses and purchases as well as material ratings (link **1510**), customizes access permissions (link **1515**), or creates or joins multi-owner educational packages (link **1520**) as described further below.

[0126] 3. Institution Administrator Role

[0127] Some embodiments support an "institution administrator" account type. This account type is utilized by an institution's Dean, a school department's Chairperson, an institution's manager, institution's director, or school district principal. An institution administrator account user in some embodiments sends a request to affiliated instructor users to gain access to certain information related to some of the courses being offered (or that have been offered in the past) by an instructor. Based on settings by the instructor user, the "administrator" user with proper access can view: (i) instructor's ratings by student users, (ii) instructor's evaluation/assessment results. For example, an instructor user can make the course material private and no non-enrolled user can access the course material. Even in this case, the administrator user can review course teaching material, (iii) enrolled students' comments on instructor's performance, (iv) evolution of course and instructor performance over time, (v) quality of coverage of important concepts and student progress, (vi) exercise and conduct any predefined/customized "instructor assessment" by distributing assessment questionnaires to enrolled students and observing the outcome, and (vii) course material posted by an instructor.

[0128] When an institution administrator logins to his/her account with the system, he/she sees a list of courses currently offered by instructors affiliated with his/her institution. The list is created and maintained by sending requests to affiliated instructors by the institution administrator account user (through the disclosed system) and asking them to authorize the institution administrator to have administrative access privilege to their courses. Therefore, the institution administrator user sees the list of courses and can select each course to access information elements and analysis intended to help with his/her duties as, e.g., institution Dean or Chairperson.

[0129] Besides having access to the instructors' ratings, evaluations and assessments, an administrator user in some embodiments has access and uses ratings and evaluations of different courses. By using this data, the administrator user assesses courses offered in his/her institution and decides on any necessary improvements or change on any course. An administrator user in some embodiments also has access to the evaluations of courses offered in other institutions (i.e., the evaluations that are available to all users, to the particular user, or to all institutional administrators) and compares them with the courses offered in his/her institution/department. An administrator user also has access to students' accounts registered in his/her institution (only for enrolled courses affiliated with that institution). In some embodiments, once the student enrolls in a course that is affiliated with an institution, that "institution" administrator user automatically gets access to students data related to that course (i.e., the student cannot restrict access to that particular course). In other embodiments, even if the student user enrolls in an affiliated course, the student user still needs to explicitly give access to the "institution" administrator user to access his/her course data.) He/she can view all the information on students including their present and past courses, their grades, their rankings, instructors' comments and etc. For instance, an administrator user who works for a school district can have access to all the information on the schools on his/her district.

[0130] FIG. **16** conceptually illustrates a process **1600** for registering and providing services to a user who wishes to act as an institution administrator or wishes to add institution administrator as an additional role. As shown, the process determines (at **1605**) whether the user has an existing account (e.g., as described by reference to FIG. **1**). When the user already has an account, the process proceeds to **1615** which is described below. Otherwise, the process creates (at **1610**) a new account for the user based on a unique user name and a password selected by the user (e.g., as described by reference to FIG. **2**).

[0131] Next, the process logs in (at **1615**) the user. The process then adds (at **1620**) institution administrator functionality to the user account (e.g., as described by reference to

FIG. **3**). For a user that has previously added the administrator functionality, the process in some embodiments skips operation **1620**.

[0132] The process then determines (at **1625**) whether the user wants to add a course or other users (such as affiliated instructors or students) to his/her list of administered users and courses (the administrator user in some embodiments has the option to add an individual course or a group of courses affiliated with the institution). When an institution administrator adds a course, the instructor for that course sees the request and still needs to approve that request before the course is added to institution administrator user's list. The confirmation, therefore, is a two-step process in some embodiments. When the user does not want to add a course to the list, the process proceeds to **1665** which is described below. Otherwise, the process determines (at **1630**) whether the user wants to internally request access permission from an instructor. If not, the process in some embodiments provides (at **1635**) instructions to the user to directly contact an instructor or student (e.g., through email) to send a request along with other required information such as institution administrator's user account information (e.g., account username), course information, name or identification of the institution, type of access, etc., to gain access to course or user information. The process then proceeds to **1655** which is described below.

[0133] The process in some embodiments assists the user to select courses, instructors, and students that the user wants to add to the list. As shown, the process receives (at **1640**) search criteria (e.g., through a user interface) for course and/or instructors that the institution administrator wants to add to the institution's administered list. The process then searches the system databases and provides (at **1645**) search results to the user based on the received criteria. The process then sends (at **1650**) an access request to a selected user to request addition of courses taught by a selected instructor user, the addition of a selected instructor user, or the addition of a selected student user to the institution administered list.

[0134] The process then determines (at **1655**) whether access permission is received from the selected user. If not, the process proceeds to **1625** which was described above. Otherwise, the process adds the approved course or the user to the administered list of the administrator. The process then allows (at **1665**) access to courses and the users to which the user has access permission as institution administrator. The process then exits.

[0135] In some embodiments, multiple institutions use the disclosed system and the system's assessment. In these embodiments, multiple institutions offer the same course on the disclosed online learning system. All these institutions use the same platform which is hosted as an independent website. For the same course, two different institution administrators can ask for different criteria to evaluate and grade the course. For the same course and the same or different students, two different administrators can use different criteria to grade and evaluate performance. Same student can participate in the same course and get different grades from different institutions. This is implemented by the instructor through defining different grading rules for the course based on student users' affiliation. For instance, students affiliated with college C**1** are required a score of 80 to receive a grade A in the course whereas students affiliated with college C**2** are required a score of 90 to receive a grade A in the course. Some embodiments provide the institution administrators to recommend or enforce assessment packages over a period of time for affiliated courses.

[0136] 4. Grant Administrator Role

[0137] Some embodiments support an account type referred to as "grant administrator". This account is utilized, e.g., by a funding or granting institution or a public or private organization to evaluate and monitor assessment and outcome of a course that is funded by the funding or granting institution. This account type gains access to information elements related to evaluation and assessment of "authorized courses" by sending a request to instructors offering courses covered by the funding institution (through the system). A grant administrator can also evaluate and monitor assessments and rating on students and instructors who are using their grants. Some embodiments utilize a process similar to process **1600** described in FIG. **16** for registering and providing services to a user who wishes to act as a grant administrator or wishes to add grant administrator as an additional role. In these embodiments, the user adds grant administrator functionality in operation **1620** and the "administered list" in operations **1625**, **1640**, **1650**, and **1660** is the "grant administered" list.

[0138] This account role is utilized by granting organizations supporting a student (for a degree, training, extension course, etc.) or supporting an instructor for teaching to a course (or research related to a course). In the case of an organization funding a student user, the grant administrator user requests to add the funded student user to his/her list. Once acknowledged by the student user, the grant administrator user sees the funded student in his/her list (along with the grades, homework returns, project presentations, rankings, comments/reviews by instructors, educational progress over time).

[0139] The grant administrator user then attaches the funding information to the student user's account and also requests access to performance of the student user for a period of time starting before the funding and extending to after grant termination. The grant administrator user is provided the option to compare the funded student against other student users (e.g., statistically without disclosing other users' data) with common profiles. For example, the grant administrator compares the funded student against other students in the region, or students with a weak performance in Mathematics in previous quarters, etc. Similarly, an organization that has supported an instructor (for teaching or research) uses the grant administrator role to monitor the performance and outcome of courses offered by a funded instructor (over time and compared to other instructors/courses). Some embodiments provide the grant administrators to recommend or enforce assessment packages over a period of time for affiliated courses.

[0140] 5. Employer Role

[0141] Some embodiments support an account type referred to as "employer". This account is utilized by employers or recruiters (e.g., corporations or educational institutions). The account type maintains privileges and functionalities to help employers with selectively searching for suitable candidates and their reviews histories, assessment histories, and assessment analysis. The account type provides the employer users with the capability to selectively delivering and distributing their job vacancies to student and instructor users. Comprehensive "fee charging" models are supported for employers using the system and accessing student and

instructor users and their authorized data. Some embodiments charge the employer users differently depending on the level and details of information available to them. For instance, some embodiments implement the following tiered access (and corresponding fee charge): (i) search users based only on their affiliations and fields of study, (ii) filter users based on their grades and rankings, (iii) filter and access users based on their grades in certain courses, and (iv) access to reviews provided by instructors in the past courses.

[0142] Employers in some embodiments interact with potential candidates and have access to candidates' profiles which include their educational and professional history. One of the differences between the embodiments of the present invention and prior art job search websites is that in the embodiments of the present invention there are several types of information: (i) information that the user enters, (ii) information that is entered by other users in the system e.g., the instructors and previous employers, and (iii) data on candidates that is gathered by the system, e.g., comments an instructor can write for the student, the rankings of student in different courses, list of courses taken by a student user (enrolled, audited, and observed courses), quality and performance of instructors who taught the courses, student's grades per course, student's term projects and presentations, etc.

[0143] A student user, for instance, can authorize certain employer users to have access to: (i) student's grades for different courses, (ii) rankings per each course, (iii) course homework returns and project presentations, and (iv) reviews left by the instructors. The employer user can also request the potential candidate to allow the system to let the employer contact the instructors and interact and communicate with them.

[0144] Some embodiments provide communication links for employers to candidates' references. In prior art systems, an applicant has to provide the information e.g., the name, phone number and email address of their references to the employer. In some embodiments of the present invention, references' names are selectable by the employers (e.g., by clicking on a provided link) and the employer is transferred to their account. Then the employer is able to assess the candidate's references' credentials and send them direct messages. In some embodiments, a user (perspective job candidate) gives "employer-type" access to an employer user. The employer user sees the name of the job candidate user in his/her list (with links, etc.). Depending on level of access authorized by the candidate user, the employer user gets access to that user's account information (reviews, recommendation letters, grades if authorized specifically, etc.).

[0145] Employers in some embodiments offer and administrate specialized tests to rank their applicants. For instance an employer in chip design industry can use the system's database and rankings to select the applicants who have ranked top 5% in their circuit design courses and invite them to take an online test. In some embodiments employer users create specialized job requirements in their job postings. For example when an employer user is creating a job posting, the system gives the option of "course specific" requirements to a job posting. For instance, an employer can add a requirement for an applicant for being in the top 10% of financial accounting course or comparable courses suggested by the system to his/her accounting job postings.

[0146] Some embodiments recommend eligible candidates to the employers based on the defined requirements and the candidate's qualifications. For instance, if the requirements of a job posting are to have passed two circuit design courses and be in the top 10% in both, the system searches the students database and their grades and rankings and provides the employer the name of students who match the requirements and a link to their accounts.

[0147] Some embodiments recommend students to take specific courses based on employers' job requirements. For instance, some embodiments gather information on what courses are mostly required as a job requirement in a job posting (such as in computer engineering job postings) and then suggests computer engineering students to take those courses.

[0148] FIG. **38** conceptually illustrates a user interface **3800** for providing functionalities specific to employers in some embodiments of the invention. As shown, an employer can create generic job postings (link **3805**), create course and material specific job posting (**3810**) as described above, review recommended applicants (link **3815**), and search for candidates based on filtering of courses, grades, rankings, assessments, etc. (link **3820**).

[0149] 6. Parent or Guardian Role

[0150] Some embodiments provide a "parent" role where a parent or a guardian utilizes to create an account. The parent or guardian user in some embodiments sends a request to his/her children (student users) to have access either to all the content of their accounts or specific information such as the records for one or more courses. The parent views his/her child's grades, ratings, progress on the assignments and projects and their overall performance in the class. A parent user can create a connection through the system with his/her child's instructors for direct communications. A parent user can also network through the system with other parent users whose children share a course. In some embodiments, parent users create groups for volunteering and extra curriculum activities.

[0151] FIG. **17** conceptually illustrates a process **1700** for adding parent functionality and getting access permission to a student information in some embodiments of the invention. As shown, the process determines (at **1705**) whether the user has an existing account (e.g., as described by reference to FIG. **1**). When the user already has an account, the process proceeds to **1715** which is described below. Otherwise, the process creates (at **1710**) a new account for the user based on a unique user name and a password selected by the user (e.g., as described by reference to FIG. **2**).

[0152] Next, the process logs in (at **1715**) the user. The process then adds (at **1720**) parent functionality to the user account (e.g., when the user selects link **350** in FIG. **3**). For a user that has previously added the student functionality, the process in some embodiments skips operation **1720**.

[0153] The process then determines (at **1725**) whether the user with parent functionality wants to get access permission to a student user information. If not the process exits. Otherwise, the process determines (at **1730**) whether the user wants to internally request course enrollment from an instructor. If not, the process proceeds to **1735** which is described below. Otherwise, the process receives (at **1740**) identification of the student user and the requested access rights. The process then sends a request to the identified student to request access rights for the requesting parent user. The process then proceeds to **1750** which is described below.

[0154] When the user decides to directly (i.e., without using the system's internal messaging mechanisms) contact the student, the process in some embodiments provides (at **1735**)

instructions to the user to directly contact the student (e.g., through email) to send a request along with other required information such as requesting user's account information and the requested rights.

[0155] The process then determines (at **1750**) whether the access permission is received from the student. If not, the process proceeds to **1725** to allow the parent user to get access permission to additional student users if the parent user wants to. Otherwise, the process allows (at **1755**) access permission based on an access matrix provided by the student user. The process then exits.

[0156] 7. Admission Officer Role

[0157] Some embodiments provide an "admission officer" Role. Admission officers are affiliated with different educational institutions. Users signed up with the system with an admission officer role (e.g., when the user adds admission officer functionality by following link **325** in FIG. **3** to become admission office for a particular institution, school, or department) utilize the system for the evaluation and admission of candidates to their affiliated institutions, schools, or departments. This role is utilized, e.g., by admission offices of colleges and universities in undergraduate and graduate programs. The role streamlines the admission process by using the database and the links and connections maintained by the system.

[0158] When a student user wants to apply for an institution, he/she sends a request to an admission officer user for that institution (e.g., by following link **440** in FIG. **4** and requesting admission from one or more institutions). Once the admission officer user accepts the request (in some cases, after receiving an application processing fee payment by the requesting user), the system establishes an "applicant to admission-officer" link between the two users.

[0159] Upon the establishment of the above link, the system grants certain access privileges and communication channels to the admission officer user. The authorized admission officer user then gains access to a list of courses (list authorized by the student user) taken by the student user including but not limited to grades, rankings, project submissions/presentations, instructor evaluation of the students, assessment results of courses taken by the applicant student, and evaluation/assessment of instructors taught the courses and/or provided recommendation letters.

[0160] The admission officer user also identifies and contacts the student user's instructors in past and current enrolled courses directly through the system. The system tags, groups, and filters such exchanges under "admission office" category for more efficient communication. Furthermore, the admission officer user is provided by the system with the "longer term educational performance/profile/trajectory/employment" of student users who enrolled in the same courses (or courses with "common root" in earlier years). This data is provided in an anonymous way (without disclosing the profiles of those individual student users) and in the form of statistical analysis (e.g., median, top 10%, etc.). Also this statistical data is customized in some embodiments to be taken only over students who have a similar grades/ranking as the applicant student user.

[0161] Furthermore, any instructor only needs to fill in a single recommendation or evaluation letter for a student (who enrolled in his/her courses) and that letter is attached and archived into student user's account. The student user can conveniently reuse the same recommendation letter (in electronic format) for applications to multiple schools (as described above) as well as for the use by potential employers with "employer" user roles.

[0162] 8. Publisher Role

[0163] Although any user such as an instructor or a student can publish course material, some embodiments provides a "publisher" account type for users who just want to publish course material. A process for publishing material is described by reference to FIG. **26** below.

[0164] 9. Advertiser Role

[0165] Some embodiments provide an "advertiser" account type for any user who wishes to advertise a service (e.g., person-to-person tutoring) or to sell any products (e.g., stationery supplies). An advertiser role is created to give certain users (such as producers, service providers) the ability to provide highly customized advertisement based on users' educational information elements and their educational networking and connections. For instance, an advertiser can post and distribute targeted ads for students in bottom 10% of certain courses, or students enrolled in certain courses, or instructors teaching certain courses.

[0166] 10. Software Developer/Vendor Role

[0167] The "software developer" account type is used by software development companies for presenting, marketing, and giving remote access to their software tools to student and instructor users in a selective manner. Some embodiments provide interfaces and methods for software development companies for presenting, marketing, and giving remote access to their tools selectively to student and instructor users. These embodiments provide an interface where software companies allow users to remotely connect to internal or third party servers (where those software tools are installed and maintained) and to run those tools remotely on the software codes stored in their user account's space.

[0168] The interface in some embodiments is terminal-based while in other embodiments is graphical-based. The software companies are allowed to have different models for presenting and licensing tools. For instance, the companies can give free or discounted access to their tools for enrolled student users in certain courses. The companies can limit free access to a limited use or only to sample example codes provided by the instructor users. More comprehensive access fee calculation and payment models are provided in some embodiments.

[0169] 11. Multiple User Roles

[0170] Some embodiments allow account types and functionalities to co-exist under the same login account or under separate, different login accounts. In the first case, a user registers with the system and adds both student and instructor functionalities to his/her single account (e.g., by using the interface shown in FIG. **3**). In this case, the same user has two spaces/planes under his/her account; one with student functionality and another with instructor functionality. In this case the user can exercise both his/her functionalities through a single login account. In the second case, a user creates one login account dedicated to student functionalities and another login account dedicated to instructor functionalities.

[0171] B. Creating Affiliation with Institutions

[0172] The online learning system in some embodiments is independent from any educational institutions and is not hosted or managed by these institutions. Registering to the online learning system does not require that a student to be registered or affiliated with any educational institutions or an instructor to be hired or affiliated with any educational insti-

tutions. At the time of the initial registration, there is no requirement to provide any registration number, employment number, or any other form of identification to prove affiliation with an educational institution. Users registering as instructors can create courses and offer them to anyone in general public who has access to the Internet and registers with the system. Similarly, users registering as student can connect to the online learning system and enroll in courses that are offered to any registered students. In addition, instructors can offer courses and affiliate them exclusively to one or more institutions. Instructors can also offer courses that are affiliated to one or more institutions and at the same time offer the same courses as unaffiliated courses (e.g., to students that are not registered in any educational institutions or do not wish to take any credits from an educational institution). When a student enrolls in a course that is affiliated with one or more educational institutions, the enrolled student can request to be affiliated with one or more of those educational institutions and receive a grade upon the completion of the course from the requested educational institutions. The received grades are also applied towards degree programs in the affiliated educational institutions in some embodiments of the invention.

[0173] FIG. **18** conceptually illustrates a process **1800** for affiliating a course to one or more institutions in some embodiments of the invention. In some embodiments, process **1800** is utilized to assist an instructor user to affiliate one or more courses taught by the instructor with one or more institutions. As shown, the process determines (at **1805**) whether the instructor wants to affiliate a course with an institution (e.g., when the process receives a selection from the instructor through a user interface to affiliate courses with institutions). If not, the process proceeds to **1840** which is described below. Otherwise, the process receives (at **1810**) the identification of the course, the identification of the institution, and the type of affiliation (e.g., exclusive, non-exclusive).

[0174] The process then determines (at **1815**) whether there are any errors in the affiliation request. For instance, if the identified course is not taught by the requesting instructor, the course identification is wrong, the course has been exclusively affiliated to another institution, etc. If so, the process notifies (at **1820**) the user that the request cannot be processed. The process then proceeds to **1805** which was described above. Otherwise, the process determines (at **1825**) whether the user wants to internally request to affiliate the course with the institution. If yes, the process sends a request to the user that has institution or grant administrator functionality for the identified institution. The process then proceeds to **1840** which is described below.

[0175] When the user wants to directly contact the administrator, the process in some embodiments provides (at **1830**) instructions to the instructor to directly contact the administrator (e.g., through a provided email) to send a request along with other required information such as the instructor's username, the course information, the type of requested affiliation, the user's contact information, etc., to the administrator. In some embodiments, once the administrator receives the request, the administrator approves the affiliation and sends the approval to process **1800** through a user interface provided by the online learning system.

[0176] Next, the process determines (at **1840**) whether approval is received from the institution or grant administrator to affiliate a previously requested course with the corresponding institution. If not, the process proceeds back to **1805** to allow the instructor to affiliate the same course or other courses with more institutions. Otherwise, when the approval for a course affiliation is received, the process affiliates (at **1845**) the course with the institution and stores the affiliation information in the system database.

[0177] The process then determines if any guidelines and requirements are received from the administrator for an affiliated course. If not, the process proceeds to **1805** which was described above. Otherwise, the process sends (at **1850**) the guidelines to the instructor offering the affiliated course. The process then proceeds to **1805** which was described above.

[0178] In some embodiments, when a course is affiliated with multiple institutions, the instructor uses different grading methods, different homework and reading assignments, and/or different evaluation packages for students that have registered to the same course but are affiliated to different institutions or have no institutional affiliation. In some embodiments, when an instructor user creates a new course he/she can assign multiple affiliations to the course. Then the student users from several institutions sign up under the same course. One benefit of this mode of operation is that all reviews and assessments provided from students affiliated with several institutions are combined under a single course. In these embodiments, the instructor user uses different grading rules per group of students affiliated with each institution.

[0179] Some embodiments allow different types of students to sign up in a course. As described in the specification, students are either enrolled, auditing, or observers. The instructor has the option to define different access privileges for each of these student types. An advantage of the different types of sign up is to give instructors ability to let more students attend their courses without having to provide full service to all of them (such as grading, project review, etc.).

[0180] Also, in some embodiments, a course is only created and affiliated with one institution. In these embodiments, when an instructor happens to offer the same course at different institutions, he/she creates two separate courses under his/her account by reusing the same course material. Similarly, an instructor is given the capability to create a new course by using (or reusing) course structure and material from an existing course. For instance instructor I**1** is teaching math **101** in year 2012. She realizes that she had taught the same course in **2009**. In this case I**1** transfers copies of course notes/homework/etc., from her math **101** (year 2009) course to her math **101** (year 2012) course. This is to make the material reuse more efficient and seamless. Also I**1** realizes (or is informed by the system) that a similar course has been offered by instructor I**2**. Then I**1** asks I**2** to establish an instructor-instructor relation. Then I**1** gains access to course material math **101** offered by instructor I**2**. In this example, I**1** can then copy material from I**2**'s math **101** course as starting point for her course.

[0181] FIG. **19** conceptually illustrates a process **1900** for affiliating one or more courses with a particular institution in some embodiments of the invention. In some embodiments, process **1900** is utilized to assist a user with institution administrator or grant administrator functionality to affiliate one or more courses with the administrator's corresponding institution. These administrators are not the administrators of the online learning system but rather the users that have registered with the online learning system, added administrator functionality, and have affiliated themselves with a particular

institution. Administrators from several different institutions can affiliate the same course (or different courses) with their institutions.

[0182] As shown, the process determines (at **1905**) whether an administrator (e.g., institution or grant administrator) wants to affiliate a course with an institution. If not, the process proceeds to **1940** which is described below. Otherwise, the process receives identification of the course, identification of the institution, and the type of requested affiliation (e.g., exclusive or non-exclusive affiliation).

[0183] Next, the process determines (at **1915**) whether the affiliation request had any errors. For instance, if the course identification is wrong, the course has been exclusively affiliated to another institution, etc. If so, the process notifies (at **1920**) the user that the request cannot be processed. The process then proceeds to **1905** which was described above. Otherwise, the process determines (at **1925**) whether the user wants to internally send the request to the instructor that is offering the course. If yes, the process sends (at **1835**) a request to the course instructor. The process then proceeds to **1940** which is described below.

[0184] When the user wants to directly contact the course instructor, the process in some embodiments provides (at **1930**) instructions to the administrator to directly contact the course instructor (e.g., through a provided email) to send a request along with other required information such as the course information, the requesting institution's identification, the type of requested affiliation, the administrator's contact information, etc., to the course instructor. In some embodiments, once the instructor receives the request, the instructor approves or rejects the affiliation and sends the approval or rejection to process **1900** through a user interface provided by the online learning system.

[0185] Next, the process determines (at **1940**) whether approval is received from an instructor to affiliate a previously requested course. If not, the process proceeds back to **1905** which was described above. Otherwise, the process affiliates (at **1945**) the approved course with the requesting institution and sets access rights based on a set of access rights received from the instructor. The process then determines (at **1950**) whether guidelines and requirements for grading, homework, assignments, evaluations, etc., have received for an affiliated course. If not, the process proceeds to **1905** which was described before. Otherwise, the process sends (at **1955**) the guidelines and requirements to the instructor offering the affiliated course. The process then proceeds to **1905** which was described above. In some embodiments, when a course is affiliated with multiple institutions, the instructor uses different grading methods, different homework and reading assignments, and/or different evaluation packages for students that have registered to the same course but are affiliated to different institutions or have no institutional affiliation.

[0186] FIG. **20** conceptually illustrates a process **2000** for affiliating one or more users with a particular institution in some embodiments of the invention. In some embodiments, process **2000** is utilized to assist a user that (i) is registered as a student with one or more educational institutions or (ii) cooperates as an instructor with one or more educational institutions to register with the disclosed independent online learning center and add affiliation to specific institutions. In this way, a student registered to the online learning system can get credits with one or more external institutions. Similarly, an instructor that is offering courses in the disclosed independent online learning system, gets affiliation with one or more institutions. In some embodiments, once a student or an instructor is affiliated with one or more institutions, the user sets different options in the user profile to e.g., send grades or evaluations automatically to an administrator user or directly to the affiliated institutions.

[0187] In some embodiments, any user can add "student" or "instructor" functionality or role to his/her account. As a student user, the user is not strictly affiliated with any institutions. The student user requests and adds different courses as enrolled, auditing, or observing student. Each requested or added course can be affiliated with different institutions (e.g., offered by instructors affiliated with different institutions). Therefore, the system records in the database that the student user has taken courses affiliated with institutions A, B, C at specific time periods. Similarly, as an instructor user, a user is not strictly affiliated with any institutions. The instructor user can add affiliations to his/her offered courses. When a user with instructor functionality or role signs in, he/she can create courses under his/her account. When creating a course, the user is prompted to optionally assign an affiliation for that course to one or more institutions. That course is then considered affiliated with those institutions upon approval by the corresponding institution administrator. Therefore, the same user can create multiple courses and affiliate each course with a different institution or one course with multiple institutions. In some embodiments, the course can be offered by the user independently as a "tutorial", "free course", etc., in which the instructor is considered as "self-affiliated". In some embodiments, a course can be affiliated to multiple institutions as well as being offered to non-affiliated students.

[0188] As shown, process **2000** determines (at **2005**) whether the user wants to be affiliated with an institution. If not, the process proceeds to **2040** which is described below. Otherwise, the process receives (at **2015**) identification of the institution and the type of requested affiliation (e.g., exclusive or non-exclusive affiliation). Examples of the type of affiliation are: a student or an instructor wants to affiliate himself/herself with one or more institutions, a student wants to sign up and be affiliated to one or more institutions in a one or more courses, an instructor wants to affiliate one or more of the online courses offered by the instructor with one or more institutions.

[0189] Next, the process determines (at **2020**) whether the affiliation request had any errors. If so, the process notifies (at **2010**) the user that the request cannot be processed. The process then proceeds to **2005** which was described above. Otherwise, the process determines (at **2025**) whether the user wants to internally send the request to the institution or grant administrator associated with the requested institution. If yes, the process sends a request to the particular institution's administrator user asking for affiliation authorization. The process then proceeds to **2040** which is described below.

[0190] When the user wants to directly contact the administrator, the process in some embodiments provides (at **2030**) instructions to the user to directly contact the administrator (e.g., through email) to send a request along with other required information such as the user's name, the user's functionality (e.g., student or instructor), the institution's identification, the type of requested affiliation, the user's contact information, etc., to the administrator. In some embodiments, once the administrator receives the request, the administrator approves the affiliation for the corresponding institution and sends the approval to process **2000** through a user interface provided by the online learning system.

[0191] Next, the process determines (at **2040**) whether approval is received from an administrator to affiliate a previously requested user. If not, the process proceeds back to **2005** which was described above. Otherwise, the process affiliates (at **2045**) the approved user with the approving institution. Depending on the type of requested affiliation, either the requesting user is herself/himself affiliated with the approving institution or the requesting user is affiliated with the approving institution in one or more requested courses. The process then determines (at **2050**) whether request for grades, outcome, evaluations, etc., regarding a user is received from an affiliated institution.

[0192] If not, the process proceeds to **2005** which was described before. Otherwise, the process determines (At **2055**) whether the request is allowed based on the type of the affiliation and the type of access permission granted by the user. For instance, some embodiments allow a user (such as a student or instructor) to specifically determine what information is available to which other users. A user, e.g., can allow access to a particular course grade to a grant administrator from a granting institution, allow a particular evaluation to be visible to all instructors or only to instructors affiliated to a particular institution, etc. If the request cannot be allowed, the process notifies (at **2065**) the requesting user that the information cannot be provided. The process then proceeds to **2005** which was described above. Otherwise, the process sends (at **2060**) the requested information to the requesting administrator (or if applicable directly to a requesting institution). The then proceeds to **2005** which was described above. In some embodiments, a user can be affiliated to multiple institutions, exclusively to one institution, affiliated to multiple institutions as well as being able to simultaneously offer courses (e.g. an instructor) or take courses (e.g., a student) as an unaffiliated user.

[0193] FIG. **21** conceptually illustrates a process **2100** for gaining access to a user information by another user. In some embodiments, process **2100** is utilized to assist a user with institution administrator, grant administrator, or employer functionality to gain access to certain information (such as evaluations, grads, etc.) about another user such as a student or an instructor. The process is also utilized to assist a user with instructor functionality to gain access to certain information about another user such as a student.

[0194] As shown, the process determines (at **2105**) whether a first user is requesting access authorization to a second user's records and information. If not, the process proceeds to **2120** which is described below. Otherwise, the process determines (at **2110**) whether the two users are affiliated to the same institution. For instance, the process determines whether (i) the requesting first user is an institution administrator or grant administrator and the second user is a student or instructor affiliated to the same institution or (ii) the requesting first user is an instructor and the second user is a student and both users are affiliated to the same institution. If yes, the process proceeds to **2130** which is described below.

[0195] Otherwise, the process sends (at **2115**) a request to the second user to ask for access permission and/or suggesting that the second user becomes affiliated to the same institution as the first user. For instance, the process sends a request to a student that has received a grant from an institution and informs the user that the grant administrator for the granting institution has requested access to the student records (e.g., grades or evaluations) or the granting institution is requiring the student to become affiliated with the institution and to set certain automatic permissions for grade and record reporting. Similarly, a grant administrator user can ask an instructor who has received a grant to authorize access to his/her records for one or more funded courses.

[0196] Next, the process determines (at **2120**) whether authorization is received from a user to grant access to requested information and/or to make the user affiliated with an institution. If not, the process proceeds to **2105** which was described above. Otherwise, the process grants access permission and sends the requested information to the requesting first user. The process, if applicable, also affiliates the authorizing second user with the requesting institution. The process then proceeds to **2105** which was described above.

[0197] The process determines (at **2130**) whether the type of affiliation and the access permissions set by the second user allow access by the requesting first user to the requested information. If not, the process notifies (at **2135**) the requesting first user that the request cannot be authorized. The process then proceeds to **2105** which was described above. Otherwise, the process grants access permission and sends the requested information to the requesting first user. The process then proceeds to **2105** which was described above. In some embodiments, when a user is affiliated with multiple institutions, the user can set different access authorization for each institution to grant access to particular records, to grant automatic reporting of certain records, to grant access for a certain time period, etc.

[0198] FIG. **22** conceptually illustrates a process **2200** for automatically identifying affiliations in some embodiments of the invention. As shown, the process tracks (at **2205**) courses enrolled by each student user and identifies institutions that are affiliated with the identified courses. The process then determines (at **2210**) whether the student is already affiliated with the identified institutions. If yes, based on the preferences set by the student in student's profile and based on the specific affiliation requirements of each course, the process automatically adjusts access permissions and affiliates the student in the enrolled courses with the corresponding institutions. For instance, a user in some embodiments can set a preference to be automatically affiliated with a certain institutions once those institutions become affiliated with any courses that the student has enrolled. The process then proceeds to **2205** which was described above.

[0199] Otherwise, the process notifies (at **2220**) the student about the mandatory or optional affiliations between the enrolled courses and the identified affiliated institutions and to request for required access or affiliation authorizations. For instance, when a course is offered through a grant, the granting institution (through the corresponding grant administrator user) in some embodiments can requires grade report, evaluation report, statistical analysis, outcome report, etc. for the students.

[0200] The process then determines (at **2225**) whether authorization is received from a user to grant access to requested information and/or requested affiliation. If not, the process proceeds to **2205** which was described above. Otherwise, the process grants the requested access permissions and/or affiliates the user with the requesting institution. A similar process in some embodiments is used to automatically identify affiliations for instructor users.

[0201] C Course Material, Publication, and Content Marketplace Management

[0202] Some embodiments allow instructors to publish and distribute their class materials or notes (e.g., course notes,

topic notes), book chapters, full text books, exam samples, software samples, homeworks, exam or homework solutions, audio clips, video clips, educational animation clips, tutoring sessions, etc.) via the system's network of students and instructors. The instructors in some of these embodiments directly market the course material that they have posted to the system. Instructors utilize the system and its network of users to publish and distribute their course materials for free or for a charge. One difference between the prior art system and different embodiments of the present invention is the scope of data available to the users. For instance, a math instructor can search the students' profiles to find the students who have the lowest 5% ranking in their math classes. The instructor then sends the students a message with a link to his math notes and materials and an instruction of how they can access them. Then the students can view the rating and reviews for those materials and decide if they want to purchase them.

[0203] In the case of for-fee distribution, some embodiments utilize different usage and charge methods to allow other users to access the published material. For instance a biology instructor whose materials have the highest level of rating can search the system databases for biology instructors with the same rating levels and offer them to share materials.

[0204] For published course materials (either for-free or for-a-fee, public or selective access), comprehensive rating methodology is enabled in some embodiments of the invention. The disclosed system allows student and instructor users (registered users only) to rate and evaluate a course's material based on different criteria. Once the ratings are collected, different criteria and options are used to calculate and demonstrate overall rating results for a course material. For instance, a user can select to view rating results for a course material based on collected data from only: (i) instructor users, (ii) student users from the instructor's institution, (iii) student users from all institutions, (iv) student users with grades B and better, (v) students users in top 10% of their classes, etc.

[0205] Some embodiments provide user interfaces for the users to access published notes and material. FIG. **23** conceptually illustrates a user interface **2300** for accessing the published material in some embodiments of the invention. As shown, several links are provided for the users to perform a customized search **2305**, request permission for free material from material's owner **2310**, and pay and access the for-fee material **2315**.

[0206] FIG. **24** conceptually illustrates a user interface that is provided when a user selects link **2305** to perform customized searches in some embodiments. As shown, the user can enter several search criteria **2405-2415** such as keys words for different topics, author name, material assessment results, number of courses that have used the material as course material or as extra reading material, etc. A search is performed once the search button **2420** is selected. Once the user identifies a desired material, the user can send a request for free material or can pay and gain access to for-fee material.

[0207] FIG. **25** conceptually illustrates a user interface that is provided for viewing course material reviews and ratings in some embodiments of the invention. This user interface is displayed after the user performs a search for material and identifies several course or study materials to review and evaluate. As shown in the example of FIG. **25**, several course materials **2505-2510** are identified based on a prior search. The user can select one or more of these materials, e.g., by using select buttons **2530-2535**. The user can then view reviews for the material, view customized ratings for the material, or interact with other users (students, instructors, publishers, etc.) about the material by selecting buttons **2515-2525** respectively.

[0208] Some instructors may want to publish course material as advertisement for their quality, transfer of knowledge to all, for publicity and frame, etc. Also some instructors may want to make profit from their educational material in a fee-based model. Some embodiments include an integrated marketplace where different users utilize that marketplace to market and distribute their educational content. Special tools and capabilities are included as described in the following embodiments to improve and customize content distribution and transactions' efficiency, effectiveness, and quality. FIG. **26** conceptually illustrates a process **2600** for an instructor user to publish his/her course material to users (e.g., users not enrolled in his/her course). The process is also utilized by publisher users to publish educational material to the online learning system users. Published course material then become accessible and searchable by all users and no longer need any explicit authorization by the content owner (e.g., the instructor). As shown, the process receives (at **2605**) course and other educational material from a user and adds the material to the user account. In some embodiments, users such as instructors, publishers, students, etc. can publish course or educational material. Examples of such material are full books, book chapters, course notes, exam samples, exam solutions, software packages, software tutorials, sample, etc. The received material are uploaded and stored in the publishing user's account.

[0209] Next, the process receives (at **2610**) a request from the publishing user to publish one of the course materials. The process then receives (at **2615**) (e.g., through a graphical user interface) definition of a set of users that the publishing user wants to have access to the course material. Examples of the set of users are all users, user in the U.S., users enrolled with a particular university, users enrolled in a particular course, etc. In some embodiments, the process sets different access rights for each user or each set of users based on access controls specified by the content owner (e.g., the user that is publishing the material). Different access control criteria are further described in "Content Ownership, Sharing Management, and Access Control" subsection, below.

[0210] The process then receives (at **2620**) price for the item for the defined set of users. For instance, no charge, one time $1 flat fee, $1 per download, $1 per day, a packaged deal, etc. Some embodiments enable different pricing options by the content owner. These pricing options are customizable based on user's profiles (e.g., end-users' educational profile or purchasing users profile if the content is purchased by a user such as an institution administrator for use by students affiliated with that institution, etc.). Some embodiments provide the option to the content creator (e.g., a user with instructor role or publisher role), to define customized pricing through a "pricing table". Each row of this table contains a different price for a content based on some education and personal characteristics of content buyer/user (e.g., derived from the information stored in the profile of the user). The following are several examples with no loss of generality: (i) price is defined per geographical location; a different price is defined per countries, states, zip-codes, etc.; in some embodiments, free price is defined for certain geographical regions, (ii) pricing based on enrollment and affiliation status where users

(student or instructor) affiliated with certain institutions get discounted price or zero price, (iii) price based on educational status of users based on their grades in certain courses, buyers' rankings in a course or program, progress within a degree program, grades in certain exams, etc., (iv) package bundling: if a buyer has already purchased item A from the same or different content owner, the content owner for item B can set a different price for item B based on whether the perspective buyer has purchased item A or not; this also applies to multiple items, and (v) volume bundling: depending on number of copies previously purchased and/or number of copies being purchased, different pricing is set. Other choices for setting content price are described further below.

[0211] Referring back to FIG. **26**, the process then determines (at **2625**) whether more user price groups are to be defined. If yes, the process proceeds to **2615** to receive definition of the next set of users. Otherwise, the process publishes and/or distributes (at **2630**) the course material as configured by the publishing user. The process then collects (at **2635**) payments and credits the payments to the publishing user's account. The process then exits.

[0212] FIG. **27** conceptually illustrates a process **2700** for a user to purchase content in some embodiments of the invention. The content is either a single item or a package that includes content owned by one or more users. As shown, the process receives (at **2705**) a request from a user to purchase content. The process then determines (at **2710**) whether the price for the requested content is customized based on users' profile (e.g., end-users' and/or purchasing users' profiles as described above by reference to operation **2620** in FIG. **26**). If yes, the process proceeds to **2720** which is described below. Otherwise, the process determines (at **2715**) the price of content based on other criteria determined by the content owner such as a fix price, a price based on the number of copies that the user is purchasing, the number of copies that has been purchased by all other users so far, whether the user is purchasing the content as-as or with updates, etc. The process then proceeds to **2735** which is described below.

[0213] The process determines (at **2720**) the price of the requested content based on the user's profile. Some embodiments use the purchasing user's profile. Other embodiments use the end-user's profile if the purchasing user indicates that the content is going to be assigned to another user. The process uses the user's profile to determine the content price based on one or more different criteria such as geographical location, enrollment and affiliation status, educational status, package bundling, volume bundling, etc.

[0214] Next, the process determines (at **2725**) whether the content owner has set any other factors such as number of copies that the user is purchasing, the number of copies that has been purchased by all other users so far, whether the user is purchasing the content as-as or with updates, whether the user has purchased an item from one or more co-owners of a package (if the content being purchased is a package), etc. The process then determines (at **2730**) the final price of the content. The process then charges (at **2735**) the purchasing user for the content.

[0215] The process then determines (at **2740**) whether the purchaser wants to assign or transfer the content. In some embodiments, a user is provided with the option to purchase and pay for content items and transfer or assign those purchased items to other system users. For instance, a parent or instructor user purchases a book chapter or software package and transfers that purchased item to a child or student user. In this feature, the user purchases the item and assigns that to another user (e.g., by using the receiving user's account name, email address, etc.). The receiving user then sees the transferred content item under his/her account under purchased items. As another example, the purchasing user purchases 20 copies of a content item and transfers them to a list of 20 student users (e.g., an institution administrator is practically paying for content used in a course offering for all enrolled students). If the purchasing user does not want to transfer the content, the process updates (at **2745**) the content purchaser's profile to indicate that the user has purchased the content. The process then proceeds to **2760** which is described below.

[0216] Otherwise, the process receives (at **2750**) the identification of the assignee or assignees if the purchaser had not already indicated that previously. The process then updates (at **2755**) the profiles of the content purchaser and the end-user assignee(s) to indicate that the content is purchased by the purchasing user and is assigned to the assignee(s). The process then credits (at **2760**) the content owner for the content sold. The process then exits.

[0217] In some embodiments, a user (e.g., student role), is provided with the option to create two types of purchasing lists for educational content items he/she may find necessary or helpful for his/her educational performance. These purchasing lists are referred to as necessary-list and wish-list. The items within each list include book chapters, software packages, video clips, tutoring session, sample exams, etc. The user is provided the option to share those lists and to make them viewable by certain other users (e.g., a student is provided with the option to share the list with his/her parent user). In some embodiments, a user can have multiple wish-lists and multiple necessary lists and authorize different users (e.g., institution administrators of different institutions or different parents and guardians) to have access to different lists.

[0218] As an example, a parent user views and selects items from the list to which the parent has access, purchases them, and transfers them to his/her child user. FIG. **28** conceptually illustrates a process **2800** for creating wish-lists and necessary-lists in some embodiments of the invention. As shown, the process determines (at **2805**) whether the user wants to add content (e.g., a book) to a necessary-list. If not, the process proceeds to **2820** which is described below. Otherwise, the process receives (at **2810**) selections from the user to add different content to the user's one or more necessary-lists. If the lists do not exist, the process also creates the lists. The process then updates (at **2815**) the user's necessary-lists with the selected content. The process also updates the user's profile to include or update the necessary-lists.

[0219] Next, the process determines (at **2820**) whether the user wants to add content (e.g., optional reading material) to a wish-list. If not, the process proceeds to **2835** which is described below. Otherwise, the process receives (at **2825**) selections from the user to add different content to the user's one or more wish-lists. If the lists do not exist, the process also creates the lists. The process then updates (at **2830**) the user's wish-lists with the selected content. The process also updates the user's profile to include or update the wish-lists.

[0220] The process then determines (at **2835**) whether the user wants to share a content wish-list or necessary-list with other users (e.g., to authorize other one or more users to see the list). If not, the process exits. Otherwise, the process receives (at **2840**) the name of the user or users to share the list. The process then updates (at **2845**) the profile of the user

that owns the list and the profile of the user or users who have gained access to the list. The process then proceeds to **2835** which was described above. Once the profile of a user is updated to show the wish-lists and necessary-lists to one or more other users, the users who are authorize to see the lists can purchase the items and assign them to the user using a process similar to process **2700** described above.

[0221] Individual courses' contents in some embodiments are combined into an educational package based on the content database available within the system. The educational package is then offered for purchase, e.g., at a discounted price. The instructors (potentially affiliated with different educational institutions) group together to create and customize educational packages. As described by reference to FIG. **15** above, some embodiments provide an option for the users who own content to create (e.g., by selecting the link **1520**) multi-owner educational packages or join an existing package by offering to add content to the package. For example a "circuit design package" can include an array of entry-level and advanced course materials on topic of "circuit design" where each component within the package would be created and owned by different individuals. As described further below, networking capabilities are provided among content owners to form groups to offer educational packages. Multiple options for the distribution of sales proceeds among the individual content owners are provided in some embodiments. In one mode, the proceeds are divided equally. In another mode, sale proceeds are divided proportional to the ratings of individual contents or content-owners. In yet another mode, sale proceeds are divided proportional to the number of downloads of each item or based on reviews of buying users. In another mode, the users who contributed to the package define and negotiate an unequal sales proceedings distribution. Those users then agree and sign off on a final distribution rate.

[0222] In some embodiments, a combined package represents a full "degree" or "certificate" program. For instance, an "Economics Degree" package includes a selection of courses required to qualify a student for such degree or certification (not necessarily a formal degree). The individual course material forming the package can belong to authors and instructors affiliated with different institutions or unaffiliated with any institution.

[0223] The content owner is given the option to set pricing methods based on number of downloads and/or purchases in some embodiments. For instance, the content owner can create a price versus number of purchases price table, where the price decreases or increases as the number of purchases increases. In one example, the author configures the price table (i) to offer the content at a low price (to attract early buyers and collect reviews) and then (ii) to increase the price as more buyers purchase the item (and the rating of the content goes up). As another example, the author configures the price table to lower the price as more users purchase the item.

[0224] Several modes of content delivery and accessibility are supported in some embodiments. In one mode, the authorized content is only stored within user's account without being downloaded to user's local computer (e.g., only stored in cloud or protected encrypted local memory). The user can access content only when he/she logs into his/her account. In another mode, the content is downloaded to user's local computer. The user accesses downloaded data anytime but only on that particular computer. In another mode, the content is stored in user's local computer but is password protected. Therefore, the user still needs to use his username/password information to access the content locally in his computer.

[0225] Some embodiments provide a pricing mechanism to content owners or publishers to configure a content price to move in opposite direction of sales volume (e.g., number of downloads). For instance, a content owner is given the option to direct the system to set dynamic pricing as follows. For total sales (or downloads) below N**1**, set the price at zero, for sales between N**1** and N**2**, set price at P**1**, for sales between N**2** and N**3**, set price at P**2**, and so forth where N**3**>N**2**>N**1**>0 and P**2**>P**1**>0. The content owner can choose to have this pricing scheme (and its breakpoints) demonstrated to other users (potential purchasers) or hidden from them.

[0226] Some embodiments provide the option to individual and/or independent instructors (unaffiliated with any formal institution) to offer a full course through the system. The course is offered for free or for a fee. The instructor is given the option to issue and record a certificate of completion through the system. The system keeps an electronic copy of certificate within the student's account. The student user can then allow (e.g., by selecting link **545** in FIG. **5** or link **630** in FIG. **6**) other users (e.g., employers, instructors, administrators) to view and access this certificate of completion. The certificate can include only completion confirmation or grading/ranking as well. The offered courses can cover a variety of leaning categories: mathematics, language learning, software tutorials, technical training class, cooking class, music instruments, private teaching sessions, etc. All features and capabilities offered for institutional courses are available to independent courses as well.

[0227] D. Content Ownership, Sharing Management, and Access Control

[0228] In some embodiments, a user (e.g., a user with "instructor" role, "publisher" role, "student" role) creates content and uploads them to his/her account with the system. In some embodiments, any user who wants to create and sell content, adds publisher role to his/her account. In these embodiments, the publisher role is not validated. In other embodiments, the publishing capability is limited to certain users to control quality. In some embodiments, user with particular roles (e.g., instructor or student roles) are allowed to create and sell content and any other user who wants to create and sell content, adds publisher role to his/her account. Some embodiments inquire the user that uploads the material whether the material is original and created and owned by the user. If the material is created or owned by the uploading user, the uploaded material is then tagged with the user as the owner. For instance, some embodiments perform this tagging by watermarking the content by owner/creator's information and/or by linking to owner's account as owner.

[0229] The owner of content maintains control on defining access permissions to content (e.g., by selecting link **1515** in FIG. **15** and defining different access permissions to different users or different groups of users. In some embodiments. The followings are examples of different access permission granting and content management capabilities that are enabled in some embodiments. In some embodiments, an instructor content owner is given the option to add or authorize student users enrolled in a course. By doing so, authorized student users gain access to content associated with the course. The content owner (e.g., an instructor user) has the option to pre-define a "release schedule" for the content being released to a group of student users. For instance the content owner determines that item 1 of content becomes available and accessible by stu-

dents on a first date (e.g., Apr. 1, 2012) while item 2 of content becomes available on a second date (e.g., May 15, 2012), etc.

[0230] Owner of content is given the option to enable broader access to content in a selective manner in some embodiments. For instance, the owner can grant access to an item of content to all users (full public access), users within a geographical region, users enrolled in certain courses, users referred or recommended by certain other users. As an example, a content owner user is provided with the option to authorize a second user to be able to define/grant access permission for that content (e.g., delegating the access management task for a content item to another user).

[0231] Owner of content is given the option to include or exclude his/her content for database searching when other users are searching for relevant material. An owner is given the option to display or hide ratings (final ratings, reviews, comments, weighted ratings, rating statistics, etc.) for a content item.

[0232] Some embodiments allow the users (e.g., instructor A) to re-use or "borrow" content created by other users. FIG. **29** conceptually illustrates a process **2900** for sharing, using, or re-using content by instructors in some embodiments of the invention. As shown, the process receives (at **2905**) a request from an instructor to search for relevant course material. The process then determines (at **2910**) whether the instructor wants automatic search and suggestions for the relevant material. If yes, the process proceeds to **2925** which is described below. Otherwise, the process receives (at **2915**) criteria for searching the relevant material from the instructor. For instance, the instructor can use keywords to find relevant material. The instructor can request search for relevant material based on different ratings such as (i) rating of similar content by other users, (ii) rating of the courses that used the similar content, (iii) rating of the instructors who taught similar courses and the content they used for those courses, etc. Other criteria for searching relevant material are described in subsection "Content Search, Material Rating/Matching, and Recommendations", below. The process then searches (at **2920**) for relevant course material based on the received search criteria. The process then proceeds to **2930** which is described below.

[0233] The process automatically (i.e., without receiving a search criteria from the user) searches (at **2925**) for relevant course material based on similarity between the course material being taught by the instructor and other course. Some embodiments utilize the profile of an instructor and the information regarding a course being offered or to be offered by the instructor and provide suggestions for content material for the course as well as providing specialized links (as described in subsection "Specialized Networking by Content and User Profiles", below) to other instructors that have thought similar courses or own relevant course and study material. Other criteria for searching relevant material are described in subsection "Content Search, Material Rating/Matching, and Recommendations", below.

[0234] Once the process finds relevant course material, the process sorts (at **2930**) the relevant course material based on different ranking and assessment criteria (either automatically or based on inputs received from the instructor who is searching for material). The process then presents (at **2935**) the material found to the instructor (e.g., by displaying a list, sending an email to the instructor with the list, including the course material found as suggestions in the instructor profile, etc.).

[0235] The process then determines (at **2940**) whether the instructor wishes to share, use, or re-use any of the relevant course material. If not, the process exits. Otherwise, the process (from the instructor) receives (at **2942**) an identification of a content item that is owned or created by another user (e.g., another instructor) as relevant or helpful to the course. The process sends (at **2945**) a request to the owner of the course material identified by the instructor to get permission for sharing, using, or re-using the material.

[0236] The process then determines (at **2950**) whether the content owner has given the permission. If not, the process proceeds back to **2940** to determine whether the instructor wishes to identify another course material to share. When the material owner gives permission, the process updates the profiles of the instructor, the content owner, the course, and the course material to identify the shared material, different types of access permissions (if any) requested by the content owner, and the prices of the course material if the content is for-fee. The instructor can re-use (e.g., post under the offered course) content created or owned by the content owner (e.g., another instructor). This process is applicable to either single items only (e.g., an exam, a single course note) or the entire content needed for the course. In this mode of operation, the original owner or creator of content can have this ownership explicitly displayed when content is being re-used or borrowed, e.g., by tagging or watermarking the content (or to have the ownership demonstration waived). The process proceeds back to **2940** to determine whether the instructor wishes to identify another course material to share.

[0237] An original owner user has the option to download full content to his/her local storage in a format that is either proprietary to the system (e.g., encrypted) or in a standardized format. The downloaded content can later on be uploaded back to the system under a new account or new course.

[0238] In some embodiments, a user co-owns the ownership of content shared among multiple users. In this mode, the content is demonstrated as owned by all co-owners. Each co-owner would then have the ability to configure access and distribution permissions to the content. This mode is applicable, e.g., when several users have co-created a book-chapter, software package, etc. FIG. **30** conceptually illustrates a process **3000** for creating content with multiple owners in some embodiments of the invention. As shown, the process receives (at **3005**) a request from a content owner to create a content package. For instance, the process receives the request when a user selects link **1520** in FIG. **15** to create multi-owner educational package.

[0239] The process then receives (at **3010**) the content and the corresponding price rules and access rights for the package from the requesting user. The access rights define the access rights of the purchasers of the package to the whole package as well as to individual items in the package. In some embodiments, the access rules are set at the time of the creation of the package. In other embodiments, the access rules can change for the whole package or for individual items in the packages as more co-owners add content to the package. The pricing rules include the rules for charging for the package and the rules for dividing the proceeds among different co-owners. Different embodiments utilize different pricing rules described in this Specification and are not repeated here for brevity. In some embodiments, the pricing rules are set at the time of the creation of the package. In other embodiments, the pricing rules can change for the whole package or for individual items in the packages as more co-owners add con-

tent to the package. The process then adds (at **3015**) the received content and the corresponding price and access rights to the package and updates the profile of the content owner to include the package.

[0240] The process then determines (at **3020**) whether any other content owners have requested to add content to the package. For instance, when the package is published, other content owners can search and find the package and decide to add content to the package. Some embodiments search for relevant materials and automatically provide suggestions to the owner or owners of the package and/or to other content owners to add new content to the package. If no other content owners want to add content to the package, the process proceeds to **3040** which is described below.

[0241] Otherwise, the process determines (at **3025**) whether the existing content owners agree to add the new content (e.g., based on the quality of content, the price the owner wants, the access rights the owner wants to add to the whole content or to the part that the new content owner wants to add). If not, the process proceeds to **3020** which was described above. Otherwise, the process receives (at **3030**) content for the package along with the corresponding pricing rules and access rights from the content owner. Adding more content to the package does not necessarily add to the price of the content. The content owners are provided with several options to share the price as described in "Course Material, Publication, and Content Marketplace Management" subsection, above. In some embodiments, the new co-owner has the option to accept the existing pricing rules and access right or to offer (subject to acceptance by other co-owners) to modify the existing pricing rules and access rights to the whole package or to the part that is owned by the new co-owner. The process then adds the received content and the corresponding price and access rights to the package. The process then proceeds to **3020** which was described above.

[0242] The process then optionally provides (at **3040**) suggestions to package co-owners to find and relevant content to add to the package. Some embodiments automatically search different database and provide suggestions to the package owner for adding relevant material. Some embodiments also find other content owners and publishers that might be interested to add content to the package (e.g., by searching the users profiles) and provide suggestions both to the package owners and to other content owners to link together or request for more content to be added to the package. The package owners can also do searches by using the searching tools that are described in this Specification. Examples of different methods of providing suggestions and specialized searches are described, e.g., in subsections "Content Search, Material Rating/Matching, and Recommendations", "Assessments", "Specialized Networking by Content and User Profiles", "Career and Professional Information Processing". If not, the process exits. The process determines (at **3042**) whether the current owners of the package want other content owners to join. Otherwise, the process sends (at **3045**) a request for the additional content to the owner of the additional content. The process then determines whether the owner of the additional content has agreed to add content to the package. If yes, the process proceeds to **3030** which was described above. Otherwise, the process proceeds to **3020** which was described above. After each copy of the package is sold, the price is divided among the content owners based on the option agreed among the content owners for sharing the price.

[0243] In some embodiments, a content owner offers the full content belonging to a conventional course as a package. Several options are provided to the purchasing user. For instance, the buyer has the option to purchase and acquire the content only as-is at the time of purchase. Alternatively, the buyer acquires the content along with future updates to that course content (for example, when the owner instructor makes updates to his/her course material in the future, the buying user gets access to all updated content under that course). FIG. **31** conceptually illustrates a process **3100** for providing access to content for a user in some embodiments of the invention.

[0244] As shown, the process receives (at **3105**) a request from a user to access content. Next, the process determines (at **3110**) whether the user only has the rights to access the requested content as the content was at a particular time. Different embodiments consider different criteria for setting the access rights for an item of content. For instance, the user has purchased the content only as-is, the user was a former student that took a course at a certain time in the past and the instructor had decided to set the access matrix to give the former students (or this former student) the right to access the course material as it was at the time they had registered in the course, or the user has not purchases the content and only a certain version of the content is free to access. Other embodiments consider geographical location, enrollment and affiliation status of the users (e.g., affiliated with certain institutions); educational status of users based on their grades in certain courses, their rankings in a course or program; progress within a degree program, grades in certain exams, or other information in the user's profile to determine the access rights.

[0245] When the process determines that the user only has the right to access the requested content as the content was at a particular time, the process provides (at **3115**) access to the content as the content was at the particular time. The process then exits.

[0246] Otherwise, the process determines (at **3120**) whether the user has the right to access the requested content along with the updates. For instance, the user has purchased the content along with the right for the updates, the user is a former student and the instructor had decided to set access matrix to allow former students (or this former student) the right to access content along with the updates, or the content and its updates are free. Also as discussed above, some embodiments consider geographical location, enrollment and affiliation status of the users (e.g., affiliated with certain institutions); educational status of users based on their grades in certain courses, their rankings in a course or program; progress within a degree program, grades in certain exams, or other information in the user's profile to determine the access rights. When the process determines that the user has the right to access the requested content along with the updates, the process provides (at **3130**) access to the requested content along with the available updates. The process then exits. Otherwise, when the user has no rights to access the content, the process denies (at **3125**) the access request. The process then exits.

[0247] As described by reference to FIG. **31** above, some embodiments provide students with access to course content after the students finish a course. For instance, when a student user enrolls in course offered by an instructor in a particular year (e.g., 2010), the student gets access to course content as of a particular date (e.g., Mar. 1, 2010). In some embodi-

ments, the student user gets to keep his/her access to the course material for extended (e.g., indefinite) amount time. Some embodiments provide different modes of operations (e.g., based on the instructor's choice) to implement this feature. In the first mode, the system takes a snapshot of course content as of year (or the date) that the course was offered and stores the snapshot for student user's access in the future. Whenever the student user attempts to revisit this particular course content, he/she accesses only the course content produced or published when the student took the course (e.g., in year 2010 or the first quarter of year 2010). In the second mode of operation, the instructor allows the student user to be able to access course content revisions even after the year he/she took that course (i.e., from the date that the student took the course to present date). In this mode, the student users will also have access to all course content revisions and evolutions after the student finished the course. As an example of this mode of operation, when student user attempts to access a course content he/she took in year 2010, he/she is given options to access content revisions corresponding to years 2010, 2011, 2012, etc.

[0248] Some embodiments allow instructors to keep a record of revisions of content for the same course from previous offerings of the same course over time. When an instructor logs into his/her account, content created for the same course over different time intervals are available and accessible. The instructor can then copy parts of past courses' material to a new course.

[0249] Some embodiments provide an instructor with a customizable "access matrix" where at any time, the instructor can selectively set and filter the users (students or other instructors) with access to his/her current or past course material. The instructor specifies some materials as out of course materials and sets them accessible by a group of users and blocked to other groups of users. For instance, students who are registered in course "math **101**" are authorized to access to all materials, assignments and projects for that course. But students who are observing the course are authorized to access the notes, but not the assignments and projects.

[0250] The instructor in some embodiments creates his/her own groups with different level of access to available material. In this manner an individual user or a group of users can have different levels of visibility and access to the instructor's material. The instructor can also allow public access (all signed up users) to certain course materials. By contrast, in the current prior art e-learning systems the institution controls students' access to different courses and materials.

[0251] E Content Search, Material Rating/Matching, and Recommendations

[0252] Some embodiments utilize different methods for identifying, suggesting, and matching similar and relevant courses and course material. FIG. **32** conceptually illustrates a process **3200** for identifying similar and correlated items, providing suggestions, and performing searches based on the similarities and correlations. As shown, the process identifies (at **3205**) similar and correlated items such as course and course material in different databases. The process updates and maintains (at **3210**) data matrices showing the similarity and/or degree of correlation between different courses and learning material. Some exemplary methods include: (i) if two courses are using the same objectives and requirements in their assessment templates, this is an indication of similarity and/or correlation, (ii) if two courses are linking to the same textbook, articles, etc., (as suggested learning material) those two courses are considered more similar, and (iii) if student users enrolled in two courses search for and use the same content (i.e., publicly available content or content offered through the marketplace), those courses are tagged and identified as correlated/similar.

[0253] Information elements to update the correlation matrices include the search pattern behaviors and tagging and linking of course materials by users. For example, when a student user searches for material and finds relevant helpful material, he/she can save the desired items by tagging and saving them under a course under his/her account. The system then assigns a correlation factor (or matching factor) between that course and that material. The material can be a publicly posted material (e.g., on the Internet) or a material offered through the system's marketplace. The system then utilizes these tagging results and corresponding graphs (collected from all users in the system) to improve search results and make relevant material suggestions to users.

[0254] Process **3200** then utilizes the information in the data matrices and based on similarity, relatedness, and relevancy of material provides (at **3212**) suggestions to users to link to each other, to share, buy, or sell educational material, to join or teach a course, to create a content package, etc. These suggestions are also utilized in different embodiments of the invention to facilitate searching for or finding different items. The process then determines (at **3215**) whether the user has performed a search that returned similar or correlated items. If not, the process presents (at **3220**) the search results by displaying the results or by generating a file or a report based on the search results. The process then exits. Otherwise, the process presents (at **3225**) the search results to the user and identifies the similar and/or correlated items in the search report by using the maintained matrices. The process then exits. In some embodiments, correlation and matching factors are utilized as following for improved material search experience. Assume user U searches for educational material under one of his/her courses C. The system has identified a set of courses sufficiently correlated with course C. The system also maintains list of all materials tagged or used by all users enrolled in that set of correlated courses. Now when user U searches for material, all those materials are considered correlated and are (i) color-coded and highlighted/displayed as items used by others for similar courses, (ii) or are displayed at the top of search results.

[0255] Some embodiments provide specialized ranking and rating methods to improve searching and matching of available content as well as providing customized recommendations and material suggestions based on evaluation of content's quality. FIG. **33** conceptually illustrates a process **3300** for providing specialized ranking and rating in some embodiments of the invention. As shown, the process gathers and processes (at **3305**) information from various sources to quantify the quality of rating and assessment provided by various sources for content, courses, instructors, etc., available within the system (material posted by users or offered through the marketplace). Such quantifications are then used to accordingly scale and weight the contribution of each rating in the final/overall rating. One source of rating assessment is feedback from users who have accessed and viewed the content. As described below, users' educational profiles and backgrounds are used to accordingly scale or filter the impact of their feedback and rating of a course or course material in the overall rating and evaluation of that course or course material. In some embodiments, the users are directly

requested to provide their rating of a course material, course, instructor, program, etc. (e.g., through a survey or rating buttons or comment page). In other embodiments, the user's interest and rating of a content or course is indirectly gathered and evaluated by the system (the fact that a user accesses or links to a content item under a course is taken as an indication of usefulness of that item).

[0256] In both of these embodiments, along with storing and considering the rating and interest by each user, the following information elements are also collected and stored in connection with each rating. Educational profile information elements include: user type (e.g., instructor vs. enrolled student vs. auditing student, etc.), user's affiliated institution, user's geographical region, user's educational history (previous affiliated institutions), user's educational success (ranking, grade, completed degrees, etc.) in past courses/programs, user's specialization major (electrical engineering, mathematics, etc.), user's final earned degree, user's own performance/assessment evaluations (e.g., if user is a student, instructors' evaluation of that student user or if user is an instructor, the assessment results of that instructor), user's career status (e.g., job status, companies worked for, years of career experience, latest job position), etc. The process then scales (at **3210**) each user's ranking, rating, or assessment of an item based on the information collected about the user. Once the above information elements are attached to each collected rating, the system utilizes the database to provide specialized, comprehensive, and customizable rating and recommendation for a content item. There are several methods that the above is implemented.

[0257] The process determines (at **3310**) whether to use users' educational information in calculating the overall rating, ranking, or assessment of items. If not, the process proceeds to **3325** which is described below. Otherwise, the process scales (at **3315**) the impact of each user's rating, ranking, or assessment of an item based on the information collected about the user. The process then calculates (at **3320**) the overall rating, ranking, or assessment of each item as a weighted sum of rating, ranking, or assessment done by individual users. In this method, the educational elements associated with a rating user are translated and mapped into scaling factors. These scaling factors are then used to scale the feedback and rating by each user. For instance consider users U**1** and U**2** give ratings of R**1** and R**2** to a content/course item. Then assume the educational background of U**1** (e.g., his ranking in the course) is mapped to a scaling factor S**1** (between 0 and 1; 1 being the highest scaling) and similarly scaling factor S**2** is derived for user U**2**. Then the overall rating of the content item is calculated as a weighted sum:

$$(R1*S1+R2*S2)/(S1+S2)$$

[0258] In some embodiments, scaling factor S**1** itself is calculated based on a function of more granular scaling factors S**1**-**1** (based on ranking in the class), S**1**-**2** (based on career success), S**1**-**3** (performance rating of the user), and so on, where S**1**=func (S**1**-**1**, S**1**-**2**, S**1**-**3**, . . .). The process then proceeds to **3340** which is described below.

[0259] The process determines (at **3325**) whether to utilize usage of items in calculating the items' ratings, rankings, or assessments. If not, the process proceeds to **3335** which is described below. Otherwise, the process calculates (at **3330**) the overall rating, ranking, or assessment of each item as a weighted sum of different usages of the item. In this method, the content rating is indirectly/implicitly derived from the usages of that content by other users and for various courses. Consider a content item C (e.g., a book, book chapter, software application, exam, exam solution, software tutorial/training, video clip, etc.). The following information is gathered by the system for rating/assessment of item C: (i) student users who have downloaded and/or linked to item C in relation to any of their enrolled courses (in the past or present), (ii) instructor users who have listed (linked to) item C as a primary/mandatory material for their courses, (iii) instructor users who have listed item C as a recommended/optional material for their courses, (iv) employers who have linked to item C as a relevant/required/desired material for their job postings, (v) other users (e.g., non-enrolled students) who have downloaded or accessed the item C for individual readings. The system then calculates and assigns a partial rating number to each of above categories. For input (i) above, R**1** is calculated as a function (e.g., a monotonic function) of number of those student users, amount of time spent by those users accessing or viewing the item C, ratings of their affiliated schools, and educational and career success of those student users. For input (ii), R**2** is calculated as a function (e.g., a monotonic function) of number of those instructors, ratings and assessments of those instructors and courses, number of other instructors linked to each listing instructors with an instructor-to-instructor link type, accumulated number of students instructed (lifetime) by each listing instructor, number of courses taught by each listing instructor, number of funding grants awarded. For input (iii), similar to input (ii), R**3** is calculated as a function (e.g., a monotonic function) of those instructors, ratings and assessments of those instructors and courses, number of other instructors linked to each listing instructors with an instructor-to-instructor link type, accumulated number of students instructed (lifetime) by each listing instructor, number of courses taught by each listing instructor, number of funding grants awarded. For input (iv), R**4** is calculated as a function (e.g., a monotonic function) of number of job postings listing the item C, size of employers (e.g., number of employees, market size, etc.) listing item C, rating of the employers listing item C (e.g., average salary, growth rate). Once partial ratings R**1**, R**2**, R**3**, and R**4** are calculated as descried above, then the overall rating is calculated as a function in the form of func(R**1**, R**2**, R**3**, R**4**). Exemplary and simple realizations of this function may be (R**1**+R**2**+R**3**+R**4**)/4 and R**1**×R**2**×R**3**×R**4**.

[0260] Process **3300** then proceeds to **3340** which is described below. The process uses (at **3335**) a combination or hybrid of rating calculations based on both users' educational information and usages of the items. The process then stores (at **3340**) the overall ratings, rankings, and assessments of different items. In some embodiments, the user is given the option to define, customize, or modify the functions used in any of the above options (e.g., adjust weighting factors). These customizations are then stored for the user and applied for future searches/recommendations.

[0261] FIG. **34** conceptually illustrates an example of the flow for rating assessment of a content item in some embodiments of the invention. As shown, the overall rating function **3405** for content item C receives several inputs; three of them are shown in FIG. **34**. In this example, the overall rating function for content item C uses partial rating functions R**1** **3415**, R**2** **3420**, and R**3** **3425**.

[0262] The database **3410** stores different educational and professional profiles and information for all users in different roles, students, instructors, employers, administrators, etc.

The database also stores ratings and assessments of all users. Content items and their usage are also stored in the database. After student user S1 downloads content item C, the fact that S1 has downloaded item C (shown as box **3430**) is used to update the results of the partial rating R1 function. Assume that R1 **3415** is a function of number of student users accessing item C, amount of time spent by those users accessing or viewing the item C, ratings of their affiliated schools, and educational and career success of those student users. After S1 downloads content C, the number of students accessing C is increased by one (assuming that this is the first time S1 is accessing content C). S1's history, rating, profile, etc., (shown as box **3435**) which are saved in the database are used as scaling factor to weight the downloading of item C by S1 in assessing the rating of item C. Even if S1 had accessed item C before, accessing item C by S1 again is a factor that affects the results of function R1 in some embodiments of the invention.

[0263] FIG. **34** also shows that instructor I1 has recommended item C (shown as box **3440**). The results of partial rating R2 function **3420** is updated to consider recommendation of item C by I1. Information regarding I1's history, assessments, profile, etc., (shown as box **3445**) is used as scaling factor to weight the effects of recommending item C by I1.

[0264] The figure also shows that instructor employer user E1 has required item C (e.g., taking a course that used item C as a required reading material) as a pre-condition or as an advantage in getting employment by employer E1. The results of partial rating R3 function **3425** is updated to consider requirement of item C by E1 (shown as box **3450**). Information regarding E1's history, assessments, profile, etc., (shown as box **3455**) is used as scaling factor to weight the effects of requiring item C by E1. Using the results of partial rating functions **3415-3425**, the overall rating of item C is updated. The updated rating and assessment are stored back (as shown by the box **3460**) in the database **3410**. The assessment and rating of item C are used for future searching and making suggestions for item C.

[0265] Referring back to FIG. **33**, the process determines (at **3345**) whether a user wants to perform searching based on specialized rankings, ratings, or assessments. If not, the process proceeds to **3355** which is described below. Otherwise, the process filters (at **3350**) the search based on the specialized ranking criteria received from the user. A user that searches for materials, instructors, schools, etc., based on other users' ratings and recommendations is given the option to customize and filter the rating samples being used for his/her search in some embodiments. Several customized search options are provided in some embodiments where a searching user asks the system to only use certain user categories' feedback/rating in performing the search and calculation of rating for the content items and sorting of the matching items. The followings are examples of filtering and categorizations used by the searching user in some embodiments: (i) feedback/rating from users with grades B or higher, (ii) feedback from users affiliated with school S1, S2, . . . (iii) users with Ph.D. degrees, (iv) users ranking in top 5% of their classes, (v) users with instructor role, (vi) users with student role, (vii) users at bottom 10% of their classes, (viii) users who purchased the item, and (ix) users who got employed after their last degree graduation.

[0266] The process utilizes the specialized ranking, rating, and assessment information to provide (at **3355**) different suggestions to users. In some embodiments, the system performs "matching analysis" to evaluate correlation, matching, and rating of content items from a user's perspective or a course. Some embodiments utilize the following information categories: (i) content items that are correlated or related to a course taken by a user (using the methods discussed above) and (ii) the rating and feedback from all other users for those identified relevant content items (as described above). These embodiments then rank those relevant items (based on rating calculations) and suggest, e.g., the top 1 or 3 or 5 items to the user under his/her account or under the course. The suggested links include: textbooks, course notes, exam samples, problem samples, problem solutions, software samples, video lectures, seminars, tutorials, etc.

[0267] In addition to the above criteria, process **3300** utilizes one or more of the followings to perform the rating and matching calculations described above. Some embodiments perform the rating and matching calculations using feedback only from a subset of users based on the target user's educational background. For example, if a student user is ranked in bottom 20% of a course, the system makes suggestions only using feedback from student users that rank in bottom 20% of their courses.

[0268] Some embodiment use "accumulated or group success" of students enrolled in a course, school, program, or instructor as a rating factor in quantifying the final rating of those course materials, schools, instructors, programs, etc. "Success" factors include: professional track record (rating of subsequent schools attended, jobs attained), future degrees completed (e.g., B.S., M.S., Ph.D.), performance on various examinations, other users' feedbacks and ratings, etc. As an example, some embodiments provide rating for school S (course C, course note N, Instructor I, program P, etc.) based on cumulative statistics of post-graduation professional successes of students who attended that school.

[0269] A rating and recommending capability is provided in some embodiments based on course material recommendations by other instructor users. This is a special case of another embodiment where only feedback and information from category of instructor users are used for rating and evaluation of content items. The system database stores the information on course material (e.g., textbooks, course notes by an instructor, lab examples, etc.) that are being recommended by other instructors as primary or complementary material for their courses. The system processes this data in different ways to provide ranking, rating, and recommending of content to other users. For example, in some embodiments the system provides searching, rating, and suggestion based on number of instructors who have tagged or recommended a piece of content as mandatory/complementary course material for their offered courses. In some embodiments, this rating is based on: (i) number of instructors, (ii) accumulative number of students enrolled into those instructors' courses, (iii) latest number of instructors and/or students using that material, (iv) accumulation number of users that used that material over a period of time, and (v) weighted summation where each instructor in the summation is scaled proportionally by the "rating" of instructor, school, program (where "rating" is calculated by the system as described in this document).

[0270] In some embodiments, the rating and recommending of courses, content, programs, schools, etc., is customized through the information provided by graduated students based on level of usefulness of such content/courses in their career success/functions. The system processes all the data

provided by graduated students and provides ratings/recommendations based on cumulative career successes of the users recommending those courses, content, programs, schools, etc. Career success factors include: financial compensation, job satisfaction, ease of acquiring jobs, etc. Additionally, the system provides specialized ratings, suggestions based on a course, content, program's cumulative contribution to users' career successes and functions.

[0271] In one mode of content delivery, users access content only through the system in an online manner (without downloading content to their local computers). In this mode, the system keeps track of amount of time spent by a user viewing each piece of content (with a breakdown of time spent per each page of content). This information is then used as an additional factor in rating a content, course, author, etc.

[0272] F. History of User Activities

[0273] Some embodiments maintain a history of student and instructor users' activities. These embodiments save the educational and professional history of users. For students, this history includes: all past courses taken in different institutions (which covers institutions and instructors offering those courses), grades, class rankings, reviews/feedbacks by instructors, course materials, submitted homework, etc. For instructors, this history includes: all past courses offered (which covers institutions affiliated with while offering those courses), student reviews and comments, assessment and evaluation outcomes, course materials, review/comments/ratings of offered course materials, etc.

[0274] Each user (student or instructor) has full control on accessibility of about history elements by other users through comprehensive customizable "access matrices". For instance, a student user authorizes a list of "instructor" users to have access to history of his/her information elements. As another example, an instructor user authorizes a list of "grant administrators" to have access to his/her history information elements.

[0275] The system keeps and maintains this history as long as the user remains a member of the system. For instance, the system keeps all the materials, assignments' answers and submitted projects of student users. In addition, every user is provided a remote storage capacity by the system that is used to store data in the cloud. This space is partitioned into subsections dedicated to the courses that student users are enrolled in or courses created by instructor users. Users save all their files and activities (intermediate work-in-progress files, documents, software source code, etc.) related to each course (the ones that are not necessarily submitted for the course) in the dedicated space for that course. The system archives and freezes all this information when the course is finished for the user's future access and reference.

[0276] G. Category of Courses Offered

[0277] Some embodiments allow individual users unaffiliated with any educational institution to also create accounts with instructor functionality. These accounts utilize the same learning management capabilities as school-affiliated instructors. These accounts are used for various other courses offered by ordinary individuals and/or non-educational institutions in some embodiments. The course marketing, offering, material distribution, grading, certification, fee-collection (if applicable), and evaluation are all managed by the system. The categories of courses offered include: (i) an individual offering basic tutoring classes, (ii) an individual offering basic college courses such as math/calculus, high-school biology, etc., (iii) instructors developing online course offerings independent of specific institutions, (iv) individuals offering other types of instructional classes such as cooking classes, classes for various hobbies such as chess playing, guitar lessons, etc., (v) corporations offering training to employees, (vi) extracurricular school lessons and activities, (vii) companies offering courses on operating and working with their products, etc. In the context of this invention, the terms "educational", "instructor", and "student" are used broadly to refer to any learning interaction, any individual providing some sort of instruction or advice or lecture or presentation, and any individual interested in signing up to access the material for learning or general knowledge. These terms are not used to refer exclusively to the educational experience that is limited to school, college, or university environments.

[0278] H. Grade and Course Material Exchange

[0279] A customizable interface is provided in some embodiments where final grades of enrolled students are exchanged with the database and servers of the corresponding educational institutions. The disclosed system is not affiliated with any institution and functions independently. However, the system provides an interface and the technology where instructors can send the enrolled students' grades to the corresponding educational institution.

[0280] An instructor user uses the system to enter and process all grades for homework, midterms, finals, projects, etc. At the end, student users enrolled in a course receive a final grade in the system. The instructor then uses that final grade in the system and passes that as the grades for enrolled students towards their degrees. In some embodiments, the system provides an Application Programming Interface (API) to an institution's internal software so that grades are communicated electronically through that API. In some embodiments, the instructor user saves final grades into a file (as text, Excel spreadsheet, etc.) and then uses that file data to upload grades to the institution's grade database.

[0281] Some embodiments provide an API for users to port or exchange course material and information from existing course management systems. For instance an instructor user that already has an account with another online educational system (with some courses already set up there) utilizes the provided API to exchange course material (notes, instructions, homework, solutions, etc.) between the two systems. If the user provides the system with his/her username and password for the other online system, the system automatically extracts all his/her data (e.g., notes, assignments, and projects) and transfers them to his/her account in the disclosed system under a new course and consistent with the system's format and infrastructure. This option is provided to facilitate the creation of new courses under the system (just as a starting point) for users who are migrating from other course management systems. Once the migration for a course is done through the provided API, the instructor user is then able to make adjustments and upgrades to the migrated material and the course by and taking advantage of all other tools and options provided by the system.

[0282] I. Statistical Analysis

[0283] Some embodiments provide tools to perform comprehensive statistical analysis based on public or private information elements related to student and instructor users. The system utilizes its comprehensive database on students, instructors, courses, materials, rankings, ratings, reviews, schools, departments, major programs, job postings, etc., and creates reports, charts and comparison studies.

[0284] J. Assessments

[0285] Some embodiments provide "assessment packages". An assessment package includes course objectives and a questioner matrix which evaluates and quantifies the course performance on each course objectives. Additionally an assessment package in some embodiments contains association between course objectives and the students' grades and performance on homework and projects covering each course objective. The course objectives in some embodiments are categorized as "desired" or "required" items to be learned in the course.

[0286] One metric used in some embodiments for assessing and evaluating a course (besides other methods described herein) is how successfully a course contributes to the outcome of other subsequent courses that use this course as a prerequisite. For instance, assume course A has certain topics as course objectives. Those course objectives are given as prerequisites for course B. In this case, if a student takes course A followed by course B, then this student's success in course B (e.g., when the student receives a good grade in course B) is used as an indicator for performance of course A. In this example, the assessment package for course B includes a list of prerequisites of the course which includes course A. The system uses the high evaluation of course B as an indicator for course A's good performance.

[0287] An assessment package in some embodiments contains test questions on materials and objectives that are supposed to be covered in the course (correct answers included). In some assessment packages, students are asked to rate the effectiveness of course material (e.g., book chapters, software, video lectures, etc.) on understanding specific goals of the course. The system collects the above information to rate and suggest learning material per learning objective. For instance if many courses list learning differential equations as a course objective, then many assessment packages in the system collect information on learning tools on differential equations. The collected statistics are used to rate and suggest rating tools for this particular objective.

[0288] Assessment packages are used to assess and evaluate courses. A user has the option of using one or more assessment packages to evaluate a course. A combination of assessment packages can be used to assess a program, degree and eventually an institution. Assessment packages are either global where a general assessment package is used by different users or local where a user creates his/her customized assessment package. An example of a general assessment package is an assessment package created by an administrator user and used by all the instructors affiliated with the administrator's institution. The users have the ability to search for existing assessment packages and mix and match different segments from different packages and create a specialized course assessment for their own purpose. Grant administrators can also create their own assessment packages and ask instructors to use them.

[0289] When existing assessment packages are used by multiple courses, a comparative analysis between assessment outcomes from different courses is provided by the system. The system creates specialized reports from assessment packages for different user types e.g., grant administrators. For instance an administrator with access to the assessment package data from different courses (for example district principal), is provided with comparative analysis across all courses taught by instructors affiliated by that district. An assessment package itself can be ranked by users e.g., instructors and administrators. The assessment packages with higher rankings would be used by more instructors and administrators.

[0290] Some embodiments correlate student's performance with funding grant. As an example when a student receives a scholarship the grant agency administrator can enter the grant's information (amount of grant, start/end dates) to the system and attach the grant data to the student user's account. Once the student user approves the request the grant administrator user will gain access to student's performance for a period of time. The student's performance can include grades, rankings, notes from instructors, homework grades, etc.

[0291] Some embodiments correlate course/instructor assessments with teaching/research funding. For instance when an instructor receives a teaching/research fund, the grant agency administrator enters the grant's information (amount of grant, start/end dates) and attaches that grant data to the instructor user's account. Once the instructor user approves the request, the grant administrator user gains access to course/instructor assessments for a period of time. The grant administrator compares the assessments for this instructor against the other instructors' assessments. The grant administrator recommends or enforces certain assessment packages for a period of time.

[0292] A grant or institution administrator creates assessment packages and/or templates for different courses and enforces them as default assessment for the courses under his/her affiliation in some embodiments. The benefit is to apply a unified assessment package across different courses. For instance, USC math department chairperson creates a unified assessment for math **101** course and enforces that as the package used by math **101** any time offered by a USC math instructor (i.e., if that course is affiliated with USC math department). As another example, the Los Angeles School District administrator creates an assessment package for course history and enforces all history courses across Los Angeles School District to use that package for their assessment. Instead of creating a new package, such administrator users search for existing packages, select one, and enforce that selected/recommended one to all courses affiliated.

[0293] Users' educational profiles are used in some embodiments to accordingly scale or filter the impact of their evaluations in the overall rating and evaluation of a material. Educational profile information elements used to scale and weight the evaluation of a user includes: user functionality (instructor vs. student), user's affiliated school, user's affiliated school, user's geographical area, user's educational history, user's success (ranking, grade, etc.) in past courses, user's specialization major, user's final earned degree, user's own performance evaluations (if student, by his/her instructors, if instructor, by his/her students), user's career status (e.g., companies worked for, years of career experience, latest job position), etc.

[0294] Some embodiments rank assessment packages to enable instructors to choose a better package. Assessment packages are be searched and filtered based on the different criteria such as: (i) number of instances a package has been used for different courses (affiliated to different institutions and over different time periods), (ii) filtering based on the frequency of usage by a specific institution (e.g., search for and use packages that are commonly used in courses affiliated with USC), (iii) filtering based on who has created or recommended a particular package (e.g., institution administrators or grant administrators recommendations takes a higher

weight), and (iv) students and instructors rating of the assessment packages (e.g., a rating of from 1 to 5).

[0295] Some embodiments bundle courses with common roots when creating rating, reviews, assessments, etc. for these courses. For instance, assume that instructor I**1** is teaching math **101** in years 2010, 2011, and 2012. Since this is effectively the same course (but offered at different years and to different student users), the system uses this information in some embodiments to combine and collect the ratings, reviews, assessments, etc. for these three courses under a root course math **101**. In this case, the user I**1** assigns all these three courses under root math **101** for reviews, evaluations, assessments, etc.

[0296] 1. Graph-Based Joint Assessment

[0297] Some embodiments consider the history and trajectory of courses and students over time to assess the performance and outcome of a course or instructor. Each group of events related to a course or a student is considered as a node of the graph which is related to other nodes of the graph by one or more dependencies. If a course (or students enrolled in a course) leads to future successful events (e.g., high performance follow-on courses, successful job acquisitions, successful admission rates, etc.), those subsequent successes are taken into account for adjusting the assessments. Similarly, unsuccessful future events are taken into account for adjusting the assessment. These information elements are utilized in addition to questionnaires and other means provisioned in assessment packages for further improvement in performance quantification.

[0298] FIG. **35** conceptually illustrates an example of how the interconnections between courses and job postings are used to improve course and instructor assessment accuracy in some embodiments of the invention. In this example, there are links and information elements between the courses and job postings that are utilized for assessment purposes. Such links and interdependencies include: (i) students who advance from course to course, (ii) topics that are common amongst course or are objectives of a course while prerequisite of another course, (iii) skills, topics, courses that are listed as requirements for job postings, and (iv) students who complete a course and successfully receive a job offer in response to a job posting.

[0299] As shown in node **3505** in the example of FIG. **35**, course C**1** is offered by instructor user I**1** in year 2000. Students SA and SB are enrolled in this course (several other students are enrolled as well). The course objectives are T**1** and T**2** (e.g., calculus and differential equations). As shown in node **3510**, course C**2** is offered by instructor user **12** in the following year (i.e., year 2001). Students SA and SB who have completed course C**1** in 2000 are enrolled in course C**2** as well. Two new objectives and/or topics T**3** and T**4** are given for course C**2** by the assessment package. Furthermore, topic T**1** is given as prerequisites for course C**2**. Furthermore, as shown in node **3515**, employer E creates a job posting with the system and lists course C**2** as a relevant desired course for the opening. Employer E also lists topic T**3** as a skill requirement for the opening. Student user SB qualifies for the job posting and receives an offer.

[0300] The following links and events are detected and identified by the system and used to link the assessment quantifications between the courses. Each event described below triggers an adjustment in assessments for courses C**1** and C**2** (on top of results out of assessment packages). Since objectives of course C**1** (e.g., topics T**1**) are used as prerequisites of course C**2**, depending on the number students graduated from C**1** and then enrolled in C**2**, a high overall performance assessment for C**2** propagates back to improve C**1**'s assessment through a scaling factor. Vice versa, a negative performance for C**2** degrades C**1**'s assessment through a scaling factor.

[0301] Students SA and SB's high performance in C**2** (e.g., improvement from C**1** to C**2**, higher grades/ranking in C**2**, etc.) impacts and improves C**1**'s assessment.

[0302] Since C**2** is listed as a desired course for a job posting, C**2**'s assessment is improved through a weighting factor (depending on the number of job posting listing course C**2** as a desired course).

[0303] Since a job posting has listed topic T**3** as a required skill, in any assessment package that topic T**3** is listed as an objective (e.g., course C**2**), that course objective gets a higher weighting factor in overall assessment calculation.

[0304] Since student SB receives a job offer (to the posting by employer E), this event triggers following adjustment in assessment figures: (i) an improvement in the performance assessment figures for course C**2** (with some scaling factor) and course C**1** (with a different scaling factor) due to the job offer event and the fact that student SB attended courses C**2** and C**1** with objectives relevant to the job requirements, (ii) questionnaires, ratings, reviews by student SB get a boost in their weighting factor triggered by the job offer event, (iii) triggered by the job offer event, objective T**3** gets a higher weight in assessment of course C**2**'s assessment, and (iv) course material (homework, book chapters, notes, applications) that contributed to objective T**3** in C**2** and T**1** in C**1** would get a higher rating/review and higher weighting factor in assessments.

[0305] K. Specialized Networking by Content and User Profiles

[0306] Some embodiments provide for networking among the users (students, instructors, and other roles) utilizing the "educational and/or functional" information elements associated with a user's account/role. A student user's profile exploits user's educational information elements such as institutions attended, courses taken, course outcomes (if authorized by students), etc. An instructor user's profile exploits user's educational information elements such as institutions affiliated with, courses taught, assessment and ratings for the taught courses, rating of published course materials, etc. Some embodiments also exploit the links between member students and instructors to enhance the quality and effectiveness of networking (social or professional) among system's registered users. Such exploited links may include: (i) a link indicating two users have a student-instructor relation (automatically identified by the system since the student user is enrolled in a course offered by the instructor user), (ii) a link indicating classmate relation, (iii) a link indicating a buyer to content owner relation (automatically identified by the system when a user purchases a content item). Some embodiments provide networking and interaction capabilities by utilizing the database information elements and collected information from all types of users and the relations links identified or established among users. The following describes networking features provided in some embodiments of the invention.

[0307] FIG. **36** conceptually illustrates specialized networking features of some embodiments. In this example, Student S**1** has taken course C**1** and has purchased item M**1** (as shown by **3605**). Also, Student S**2** has taken course C**1** (as

shown by **3610**). In addition, instructor I**1** has offered course C**1** (as shown by **3415**) and instructor I**2** has authored item M**1** (as shown by **3420**).

[0308] As shown, the above actions by users S**1**, S**2**, I**1**, and I**2** create several networking links among these users. Some or all of these links are created automatically in some embodiments. Since students S**1** and S**2** are taking course C**1**, they are linked (as shown by link **3625**) together as classmates. Students S**1** and S**2** are also linked by the corresponding student-to-instructor links **3630** and **3635** to instructor I**1**.

[0309] In addition, since student S**1** has purchased item M**1** and instructor I**2** has authored M**1**, S**1** and I**1** are connected by the buyer-to-content-owner link **3640** which, e.g., allows the system to determine what access rights S**1** has to item M**1** based on accessing rights that I**2** has set as owner of item M**1** for the purchasers of item M**1**. As shown, instructors I**1** and **12** are also linked by the instructor-to-instructor link **3645**. The instructor-to-instructor links allow, e.g., instructors to offer each other to share course material, to co-own material, to publish packages, etc.

[0310] FIG. **37** conceptually illustrates a process **3700** for providing specialized networks in some embodiments of the invention. As shown, the process identifies (at **3705**) different relationships between a user and other users. In some embodiments, users search and identify other similar users and tag them based on the relationships. For instance, instructors search and identify other instructors who offer similar or related courses in other institutions (using the system's database search engine). Some embodiments identify similarities between the users such as different instructors and provide suggestion for the users to link. The users can then add the other users to their list of professional friends or connected users. For instance, student users enrolled in the same course see a hyperlink list of their classmates in each of their courses in some embodiments. They then choose to add one or more of those classmates to their list of professional friends or connected classmates.

[0311] The process then provides (at **3710**) communication channels between professional friends in the form of: message, text, voice message, and real-time voice and video communication. For example, those connected users (with this relation type) can chat directly/instantly (unlike the chat limitations imposed for other relation types). Also the messages exchanged associated with this relation type are color coded differently or grouped into a dedicated folder automatically. Furthermore, instructors can then request, consult, or share course materials and experiences with their professional friends (e.g., other instructors through the system).

[0312] The system provides communication channels between professional friends in the form of message, text, voice message, and real-time voice and video communication. Furthermore, students can then interact with others students/instructors (in their list) through the system to request, consult, or share course materials and experiences or perform joint projects. Users can continue their interactions even after completing their joint courses (current classmate status changed to former classmates after completion of a course).

[0313] In some embodiments, users tag their relationship with each professional friend by a different "relationship type" based on the type of professional relationship between them.

[0314] Relation types include: "instructor to instructor", "student to current-instructor", "student to former-instructor", "classmate to classmate", "instructor to former-student", "student to same-major-student", "student to same-school-student", "student to content-owner", "instructor to content-owner", "buyer to content-author". Some of these categories are determined and entered by the user while some are automatically figured out by the system when the relationships are automatically identifiable. When a user purchases a piece of content offered by another user, some embodiments automatically establish a relationship of type "buyer to content-author" between the purchasing user and the content author or owner. This relationship categorization enables a distinguished communication channel between the both sides. The purchasing user can then use the system to provide feedback/comments to content owner. The messages from a buyer to a content owner are identified automatically and grouped into a dedicated folder for ease of access by the content owner/author.

[0315] Depending on relation type with a user, some embodiments provide customized or specialized networking or communication options and capabilities tailored towards that relation type. For a relationship confirmed as "instructor to instructor" by both users; some embodiments allow for mutual access to course content among the two users (sharing of course material if confirmed by both sides).

[0316] Some embodiments allow for message passing between different users. Message passing can be channeled through regular email or a built-in mailbox within each user's account with the system. Some embodiments allow for filtering or tagging of messages between different users based on their relationship category. For instance, messages from "student to current-instructor" category friends are routed or organized separately for quick access and response. In some embodiments "instructor to instructor" category friends would have their messages tagged with higher priority (e.g., different folder, different color, etc.).

[0317] Referring back to FIG. **37**, the process determines (at **3715**) whether the user want to hide any relationships. Some embodiments allow the users to disclose (publicly) or hide the type of their relationships with other users within the system. If not, the process proceeds to **3725** which is described below. Otherwise, the process hides (at **3720**) the relationships identified by the user from the public view (e.g., by changing an attribute of the relationship to make it invisible to the public).

[0318] The process then optionally determines (at **3725**) whether (i) the user wants to search the database using specialized relationships between other users (e.g., all students instructed by instructor I) and/or (ii) the user wants to search using the specialized relationships between the user and other users (e.g., all my students that got grade B or better). The process then performs (at **3730**) the search using the specialized relationships. when applicable, the process also utilizes other searching criteria disclosed in "Content Search, Material Rating/Matching, and Recommendations" subsection above in addition to utilizing the specialized relationships. The process then exits. In some embodiments, users use these relation types for searching or performing other tasks. For example, assume an instructor or school admin user A**1** is interacting with student user S**1**. This may be related to an admission or financial aid application by user S**1** submitted to the school that user A**1** is affiliated with. Then user A**1** (as part of the application processing flow) performs a search and finds all other users in the system that have (currently or in the past) an instructor-to-student relation with user S**1**. Based on permissions configured by user S**1**, then user A**1** uses the

system to contact those related users to inquire or request feedback on their interactions with user S1. As another example, a user U is interested to buy a content item from author user I1. Then the user U searches for all users in the system that have author-to-student relation with user I1. This provides the user U with a list of students who have purchased a learning material authored by user I1. The perspective buyer user U then contacts those users (based on permissions configured by user I1) to get the direct feedback of users who have purchased an item from the same author.

[0319] L. Career and Professional Information Processing

[0320] As part of the learning management system's functionality of some embodiments, the users have the option to provide their professional "information elements" to further improve services they receive from the system. These options are provided even after graduation or completion of courses and even if the users are no longer actively enrolled in the courses. These information elements are used to both improve the services offered to that user, as well as services offered to other users. The following describes the information elements and how the system utilizes and processes them.

[0321] FIG. **39** conceptually illustrates a process **3900** for linking career and professional information with educational profiles in some embodiments of the invention. As shown, the process receives (at **3905**) professional job information and job history. The user is given the option to provide his/her professional job information and job history to the system. This information includes jobs during or after school attendance. The database elements include: name of company, job title and responsibilities, job requirements, his/her job satisfaction, company's field of business, career field categorizations, years at the job, salary and compensation information (if desired), and mandatory or preferred expertise required for the job, etc.

[0322] Next, the process receives (at **3910**) the access rights the user wants to give to others to access his/her professional information. The system in some embodiments gives full access permission control to the user. The user decides whether the above career and professional information can be shared, disclosed, accessed, or utilized (anonymously) for rating purposes.

[0323] Next, the process receives (at **3915**) assessment information. The user is given the capability to provide assessment information linking his/her job functions, successes, and achievements to his/her education background. For instance, for each job period, the user is asked to determine: (i) courses and instructors with impact (e.g., level of 0-10) in getting that job and performing its functions, (ii) programs, degrees, trainings helpful (e.g., level of 0-10) in receiving that job and performing its functions, (iii) educational content helpful (e.g., level of 0-10) in receiving that job and performing its functions, (iv) the user's recommendations on courses and educational content helpful in achieving, performing, and sustaining that job, (v) salary and/or financial compensation corresponding to the job period, and (vi) personal satisfaction corresponding to the job period.

[0324] Next, the process utilizes and correlates (at **3920**) the information elements corresponding to professional track-record of users, in order to rate courses, content, instructors, schools, and programs. For instance, opinions of users with "better" professional track-records get higher weighting factors in quantifying the quality and rating of content, courses, schools, etc. The process then exits.

III. System Architecture

[0325] FIG. **40** conceptually illustrates the overall architecture of some embodiments of the invention. As shown, the user devices **4005** interact with databases **4010-4020** and software tools **4025-4065** through a set of centralized or distributed server computers **4070** which are networked through different connectivity. For instance, some users may use wireless link (WiFi, cellular) to connect to the system while others use wired Ethernet, optical link, etc., to connect to the system. Furthermore, different devices can be used to interact with the system (PC with regular web interface, smartphones, iPads).

[0326] The user include students, instructors, institution administrators, grant administrators, employers, software tool application developers and other vendors, publishers, advertisers, etc. These users access the system through their computing devices such as computers, mobile devices, PDAs, etc.

[0327] A. Examples of Software Tools

[0328] FIG. **40** shows several examples of the software tools that are provided in some embodiments of the invention. Management of "Student" and "Instructor" functionalities tool **4025** manages all functionalities related to course management by student and instructor users. Course material uploading, posting, viewing, and downloading are performed by this tool.

[0329] Management of "Institution Administrator" and "Grant Administrator" functionalities software tool **4030** manages all functionalities related to "Institution/Grant Administrator". Granting access to assessment/reviews of corresponding instructors and supporting different performance analysis/metrics are performed by this tool. Various assessment platforms (created by instructor, created by administrator user, ported from other accounts, etc.) are enabled and managed by this tool. Performance tracking and comparative features are provided to analyze the performance of different instructors: (i) over time, (ii) from course to course, (iii) compared to other instructors with comparable courses, (iv) based on different assessment criteria/platforms, (v) course outcome for different percentiles (top 10%, bottom 10%, etc.), and (vi) review/ratings categorized based on rating students' course performance and history. The tool **4030** allows for saving, storing, sharing, and emailing of the reports.

[0330] Course material ratings, rankings, evaluations, search, and suggestions software tool **4035** manages and categorizes all evaluations and ratings of courses and course materials. The tasks include: (i) managing assessments/reviews/ratings of courses/instructors/notes by enrolled student users, (ii) managing, filtering, and categorizing ratings of courses/instructors/notes by all other users (e.g., non-enrolled users), (iii) providing suggestions to different users (e.g., students, instructors) on other course materials that may potentially help/interest them based on analyzing the profiles/history of the users, and (iv) providing search capability that is customized based on the user's profile/history using the searching tool.

[0331] Authentication and Configurable Permissions software tool **4040** manages login/access authentication for all users as well as all configurable access permissions. This includes managing: (i) permissions to enrolled student users

by an instructor user to access course materials, (ii) permissions to institution/grant administrator users by related instructor users to access evaluation/assessment/outcome data, (iii) customized/filtered public access to published items (e.g., only students enrolled in courses math **101**, algebra **101** are given access to math **102** course material by its instructor), (iv) permissions by a student user to another user (e.g., prospective employers, admissions offices, research advisors) to access his/her academic history (e.g., courses taken, grades, rankings, evaluations/comments by instructors), (v) permissions by an instructor user to another user (e.g., prospective students, prospective hiring schools) to access his/her academic history (e.g., courses offered, course material, rankings/ratings, assessments, course outcomes, evaluation/comments by students), and (vi) customizable permissions by software providers to allows users to access and run their software offerings (remotely or locally) for free or discounted price over a certain period of time (e.g., grant special permissions to users in certain geographical regions or students enrolled in certain courses).

[0332] Social & professional networking among all user types software tool **4045** provides features for social/professional networking among the users. There exist features and capabilities designed and customized considering different usage scenarios of the disclosed system. The tasks include: (i) search capabilities for screening or finding users based on their profile/history or commonality between educational profiles, (ii) networking among the participants of a course or institution (e.g., students and the instructors), (iii) networking capability among student users enrolled in similar courses offered by different institutions, and (iv) professional networking and interaction based on profiles/histories and/or commonalities between educational profiles.

[0333] Payment and transaction processing between content consumer and content published software tool **4050** provides transaction processing between content consumers such as student users and content publishers such as instructor users, publishing companies, software vendors, etc. This tool handles payment transactions among the participating users. A content consumer can be a student user, instructor user, etc. A content provider can be any user (student, instructor), software vendor (e.g., offering access to software licenses or remote servers), publishers (offering access to text books, book chapters). Payment scenarios supported includes per-item charging, or flat-monthly charging.

[0334] Data statistics analysis, data-mining, and profiling tool **4055** analyzes all users' data for different purposes to feed into different tools in the system. This includes (but not limited to): (i) analyzing and categorizing users' profiles in terms of courses taken, technical expertise/skills, grades/rankings, potential future interest in courses/technical-notes, network of linked users, professional/educational trends of other users with common technical profiles, (ii) data-mining of reviews, assessments, ratings of all materials and users by all other users to extract patterns and trends, and (iii) data-mining of professional moves by users of similar background.

[0335] Employer job requirements matching to users' profiles and history software tool **4060** analyzes job requirements for job posting by potential employers against professional/technical profiles of the users. The tool then helps with matching and forwarding the job requirements to relevant users. This includes: (i) associating a job posting requirements with technical backgrounds and expertise (e.g., courses taken, level of success in certain courses, evaluations/assessments), (ii) associating a job posting requirements with level of success in certain independent evaluation tests administered by the disclosed system, (iii) quantifying job matching based on similarity/correlation of a user's technical/professional background against that of some reference users, (iv) providing feedback to student users in their educational direction by analyzing the trends in job requirements, (v) allowing potential employers to create detailed job posting requirements based on courses taken, grades/rankings, assessments by certain instructors, technical skills, and (vi) allowing employers to feedback to system their evaluations of their past hires through the disclosed system (level of satisfaction) to enable the system to improve future matches or suggest candidates.

[0336] Per-user configurable access method and permissions to run 3rd party software tool **4065** provides the platform to allow software vendors to offer their software tools to selected users to either run the tool on user's computer or allow the user to run the tool on remote servers. This includes: (i) offering software access for free to users enrolled in certain courses or instructors offering certain courses, (ii) offering software access to users for limited time only for free or for a discounted low price, (iii) offering software access to users to only exercise a limited set of runs and executions, (iv) linking software offerings to job posting requirements and allowing users to exercise and to train for using a software in connection to a job posting, and (v) allowing software vendors to create courses on training for using subsets of their tools (along with final exams, evaluations, mutual assessments).

[0337] B. Examples of Databases

[0338] FIG. **40** also shows several examples of databases utilized by some embodiments of the invention. As shown, these databases include users databases **4010** for student and instructor functionalities, users databases **4015** for institution and grant administrator responsibilities, and users databases **4020** for employer, developer, publisher, and advertiser functionalities. The entire database is maintained by the system and is in some embodiments distributed geographically for improved speed and security. For student users (or users with student roles), the database stores all courses taken (all course material, course related communications, forums, customizations, homework/project submissions, etc.). For instructor users, the database stores all courses offered (material, homework, projects, course related communications, forums, received returns from students). For institution/grant/admission users, the database stores all active/closed links and communications, list of instructor and student users of relevance, and snapshots of student/instructor data for ease of access.

[0339] The users do not need to maintain any local storage or copy for any of their data. All intermediate data (unfinished project, documents, etc.) is uploaded to user's database under a dedicated storage to that user and topic for future continuation or archiving at the end. The database is partitioned into sub-sections allocated for different functionalities and purposes. All databases are revision-controlled (the difference from time**1** to time**2** stored and recorded) to allow users to access older revisions (for different time stamps) for a particular piece of data.

[0340] IV. Electronic System

[0341] FIG. **41** conceptually illustrates an electronic system **4100** with which some embodiments of the invention are implemented. The electronic system **4100** may be a computer (e.g., a desktop computer, personal computer, tablet com-

puter, server, etc.), phone, PDA, or any other sort of electronic or computing device. Such an electronic system includes various types of computer readable media and interfaces for various other types of computer readable media. Electronic system **4100** in some embodiments includes a bus **4105**, processing unit(s) **4110**, a system memory **4120**, a network **4125**, a read-only memory **4130**, a permanent storage device **4135**, input devices **4140**, and output devices **4145**.

[0342] In some embodiments, customized electronic systems and devices are offered by the system (or offered by other vendors certified by the system) that allow free (or subsidized) access to wireless broadband data (3G/LTE cellular, WLAN WiFi) for as long as the electronic device is accessing the disclosed educational system through a web interface or dedicated application (e.g., iPad™ Application). Furthermore, parents or educational institutions can subsidize or pay for the Internet connection as long as the data traffic is to/from the system.

[0343] The bus **4105** collectively represents all system, peripheral, and chipset buses that communicatively connect the numerous internal devices of the electronic system **4100**. For instance, the bus **4105** communicatively connects the processing unit(s) **4110** with the read-only memory **4130**, the system memory **4120**, and the permanent storage device **4135**.

[0344] From these various memory units, the processing unit(s) **4110** retrieves instructions to execute and data to process in order to execute the processes of the invention. The processing unit(s) may be a single processor or a multi-core processor in different embodiments.

[0345] The read-only-memory (ROM) **4130** stores static data and instructions that are needed by the processing unit(s) **4110** and other modules of the electronic system. The permanent storage device **4135**, on the other hand, is a read-and-write memory device. This device is a non-volatile memory unit that stores instructions and data even when the electronic system **4100** is off. Some embodiments of the invention use a mass-storage device (such as a magnetic or optical disk and its corresponding disk drive) as the permanent storage device **4135**.

[0346] Other embodiments use a removable storage device (such as a floppy disk, flash memory device, etc., and its corresponding disk drive) as the permanent storage device. Like the permanent storage device **4135**, the system memory **4120** is a read-and-write memory device. However, unlike storage device **4135**, the system memory **4120** is a volatile read-and-write memory, such a random access memory. The system memory **4120** stores some of the instructions and data that the processor needs at runtime. In some embodiments, the invention's processes are stored in the system memory **4120**, the permanent storage device **4135**, and/or the read-only memory **4130**. For example, the various memory units include instructions for processing multimedia clips in accordance with some embodiments. From these various memory units, the processing unit(s) **4110** retrieves instructions to execute and data to process in order to execute the processes of some embodiments.

[0347] The bus **4105** also connects to the input and output devices **4140** and **4145**. The input devices **4140** enable the user to communicate information and select commands to the electronic system. The input devices **4140** include alphanumeric keyboards and pointing devices (also called "cursor control devices"), cameras (e.g., webcams), microphones or similar devices for receiving voice commands, etc. The output devices **4145** display images generated by the electronic system or otherwise output data. The output devices **4145** include printers and display devices, such as cathode ray tubes (CRT) or liquid crystal displays (LCD), as well as speakers or similar audio output devices. Some embodiments include devices such as a touchscreen that function as both input and output devices.

[0348] Finally, as shown in FIG. **41**, bus **4105** also couples electronic system **4100** to a network **4125** through a network adapter (not shown). In this manner, the computer can be a part of a network of computers (such as a local area network ("LAN"), a wide area network ("WAN"), or an Intranet, or a network of networks, such as the Internet. Any or all components of electronic system **4100** may be used in conjunction with the invention.

[0349] Many of the above-described features and applications are implemented as software processes that are specified as a set of instructions recorded on a computer readable storage medium (also referred to as computer readable medium, machine readable medium, machine readable storage). When these instructions are executed by one or more computational or processing unit(s) (e.g., one or more processors, cores of processors, or other processing units), they cause the processing unit(s) to perform the actions indicated in the instructions. Examples of computer readable media include, but are not limited to, CD-ROMs, flash drives, random access memory (RAM) chips, hard drives, erasable programmable read only memories (EPROMs), electrically erasable programmable read-only memories (EEPROMs), etc. The computer readable media does not include carrier waves and electronic signals passing wirelessly or over wired connections.

[0350] In this specification, the term "software" is meant to include firmware residing in read-only memory or applications stored in magnetic storage which can be read into memory for processing by a processor. Also, in some embodiments, multiple software inventions can be implemented as sub-parts of a larger program while remaining distinct software inventions. In some embodiments, multiple software inventions can also be implemented as separate programs. Finally, any combination of separate programs that together implement a software invention described here is within the scope of the invention. In some embodiments, the software programs, when installed to operate on one or more electronic systems, define one or more specific machine implementations that execute and perform the operations of the software programs.

[0351] Some embodiments include electronic components, such as microprocessors, storage and memory that store computer program instructions in a machine-readable or computer-readable medium (alternatively referred to as computer-readable storage media, machine-readable media, or machine-readable storage media). Some examples of such computer-readable media include RAM, ROM, read-only compact discs (CD-ROM), recordable compact discs (CD-R), rewritable compact discs (CD-RW), read-only digital versatile discs (e.g., DVD-ROM, dual-layer DVD-ROM), a variety of recordable/rewritable DVDs (e.g., DVD-RAM, DVD-RW, DVD+RW, etc.), flash memory (e.g., SD cards, mini-SD cards, micro-SD cards, etc.), magnetic and/or solid state hard drives, read-only and recordable Blu-Ray® discs, ultra density optical discs, any other optical or magnetic media, and floppy disks. The computer-readable media may store a computer program that is executable by at least one processing

unit and includes sets of instructions for performing various operations. Examples of computer programs or computer code include machine code, such as is produced by a compiler, and files including higher-level code that are executed by a computer, an electronic component, or a microprocessor using an interpreter.

[0352] While the above discussion primarily refers to microprocessor or multi-core processors that execute software, some embodiments are performed by one or more integrated circuits, such as application specific integrated circuits (ASICs) or field programmable gate arrays (FPGAs). In some embodiments, such integrated circuits execute instructions that are stored on the circuit itself. In addition, some embodiments execute software stored in programmable logic devices (PLDs), ROM, or RAM devices.

[0353] As used in this specification and any claims of this application, the terms "computer", "server", "processor", and "memory" all refer to electronic or other technological devices. These terms exclude people or groups of people. For the purposes of this specification, the terms display or displaying means displaying on an electronic device. As used in this specification and any claims of this application, the terms "computer readable medium," "computer readable media," and "machine readable medium" are entirely restricted to tangible, physical objects that store information in a form that is readable by a computer. These terms exclude any wireless signals, wired download signals, and any other ephemeral signals.

[0354] While the invention has been described with reference to numerous specific details, one of ordinary skill in the art will recognize that the invention can be embodied in other specific forms without departing from the spirit of the invention. In addition, a number of the figures (e.g., FIGS. **8**, **16-22**, **26-34**, **37**, and **39**) conceptually illustrate processes. The specific operations of these processes may not be performed in the exact order shown and described. The specific operations may not be performed in one continuous series of operations, and different specific operations may be performed in different embodiments. Furthermore, the process could be implemented using several sub-processes, or as part of a larger macro process. In addition, several different methods and techniques for analyzing data and providing specialized searches, suggestions for linking the users, suggestions for buying, selling, and sharing educational material, suggestions for joining or teaching courses, etc., are disclosed. For brevity, these methods and techniques are not repeated in every process. Other methods and techniques for providing access control and pricing are also disclosed. For brevity, these methods and techniques are not repeated in every process. It would be obvious to a person of ordinary skill in the art that the same method and techniques disclosed in a one embodiment is also applicable to other disclosed embodiments. Thus, one of ordinary skill in the art would understand that the invention is not to be limited by the foregoing illustrative details, but rather is to be defined by the appended claims.

What is claimed is:

1. A method of providing content to users of an online learning system, the method comprising:

providing a right to a first student registering in a course to access an item of content used in the course along with future updates to the item of content;

providing a right to a second student registering in the course to access the item of content as-is without future updates;

storing a copy of the content on the online learning system as a snapshot of the item of content at a time when the first and second students were registered in the course;

receiving a set of updates for the item of content after the first and second students graduate from the course;

storing the set of updates for the item of content;

receiving requests from the first and second students to access the item of content after the first and second students graduate from the course;

providing access to the stored snapshot of the item of content and the set of updates to the first student; and

providing access to the item of content without the set of updates to the second student.

2. The method of claim **1**, wherein the rights to access the item of content for the first and second students are provided based on contents of a set of profiles of the first and second students stored in the online learning system.

3. The method of claim **2**, wherein the rights to access the item of content for each of the first and second students are provided based on one of (i) a geographical location where the student is located, (ii) institutional enrollment and affiliation status of the student, and (iii) educational status of the student.

4. The method of claim **1**, wherein the rights to access the item of content for the first and second students are provided based on a set of access rights set by an instructor of the course when the first and second students registered in the course.

5. The method of claim **1**, wherein the right to access the item of content for the first second student is provided when the first student purchased the item of content with the right to access the future updates, wherein the right to access the item of content for the second student is provided when the second student purchased the item of content without the right to access the future updates.

6. A method of providing content co-ownership in an online learning system, the method comprising:

receiving a request to create a multi-owner educational content package from a first user of the online learning system, the request comprising (i) a first set of content items to add to the package, (ii) a set of access rights for users who purchase the package, and (iii) a set of pricing rules for the package to (i) calculate a price for selling each copy of the package and (ii) to share proceeds of package sale among co-owners of the package;

creating the educational content package comprising the received first set of content;

receiving a request from a second user of the online learning system to add a second set of content to the package;

adding the second set of content to the package when the first user agrees to add the second set of content to the package;

assigning the first and second users as the co-owners of the package;

selling a copy of the package to a third user of the online learning system by using the pricing rules to charge for the package; and

providing access rights to the package to the third user based on the set of access rights for users who purchase the package.

7. The method of claim 6 further comprising:
receiving requests from each user in a set of users of the online learning system to add a content to the package;
when all co-owners of the package agree to add the content correspond to a particular user to the package:
(i) adding content corresponding to each particular user to the package; and
(ii) assigning the particular user as a co-owner of the package.

8. The method of claim 6 further comprising diving proceeds for selling the copy of the package among the co-owners of the package based on pricing rules for the package to share proceeds of package sale among co-owners of the package.

9. The method of claim 8 wherein the on pricing rules for the package to share proceeds of package sale among co-owners of the package comprises one of dividing the proceeds among the co-owners (i) proportional to ratings of individual co-owners, (ii) proportional to a number of downloads of each set of content in the package, (iii) reviews of purchasing users for each set of content in the package, and (iv) a proportion negotiated among the co-owners of the content.

10. The method of claim 6, wherein pricing rules for the package to calculate a price for selling each copy of the package comprises charging a purchasing user for the package based on one of (i) a geographical location of the purchasing user, (ii) enrollment and institutional affiliation status of the purchasing user, (iii) educational status of the purchasing user, (iv) whether the purchasing user has already purchased a content item from one or more of the co-owners of the package, and (v) on a number of copies of the package previously purchased by the purchasing user.

11. The method of claim 6 further comprising:
receiving, from the second user, a set of access rights for users who purchase the package; and
modifying the access rights for users who purchase the package based on the set of access rights received from the second user.

12. The method of claim 6 further comprising:
receiving, from the second user, a set of pricing rules for the package; and
modifying the set of pricing rules for the package based on the set of pricing rules for the package received from the second user.

13. A non-transitory machine readable medium storing a program for sharing course material among a plurality of instructors in an online learning system, the program executable by at least one processing units, the program comprising sets of instructions for:
automatically searching for relevant course material for a first course taught by a first instructor of the online learning system, the searching done based on similarity between the first course and a set of other courses taught in the online learning system;
presenting a set of relevant course material items to the first instructor based on the automatic searching;
receiving an identification of a course material item in the presented set of relevant course material items from the first user to share for teaching the first course;
sending a request to an owner of the identified course material item to authorize sharing of the identified course material item; and
allowing sharing of the material by the first instructor for teaching the first course when an authorization for sharing the identified course material items is received from the owner.

14. The non-transitory machine readable medium of claim 13, wherein the program further comprises sets of instructions for:
receiving a request from the owner of the course material item for demonstrating the ownership of the course material item while the course material item is being shared by the first instructor; and
tagging the course material item to identify said owner as the owner of the course material item while the item is being shared by the first instructor.

15. The non-transitory machine readable medium of claim 13, wherein the program further comprises sets of instructions for:
receiving a set of access rights from the owner of the course material item; and
allowing access to the course material item based on the received access rights while the course material item is being shared by the first instructor.

16. The non-transitory machine readable medium claim 13, wherein the program further comprises sets of instructions for:
receiving a set of pricing rules for the course material item; and
selling the course material item for the first course based on the received pricing rules.

17. A method of purchasing and assigning content in an online learning system, the method comprising:
receiving an identification of a set of content items from a first user of the online system to add to a purchasing list of the first user;
adding the identified set of content items to the purchasing list of the first user;
receiving an authorization from the first user to share the purchasing list with a second user of the online learning system;
receiving a request from the second user to purchase a content item in the set of content items;
selling the content item to the second user;
receiving a request from the second user to assign the purchased content item to the first user; and
assigning the purchased content item to the first user.

18. The method of claim 17 further comprising:
charging the content based on a set of information in a profile of the second user,
the information in the profile comprising at least one of (i) a geographical location of the second user, (ii) an institutional affiliation status of the second user, (iii) an indication whether the second user has already purchased an item an owner of the purchased course material item, and (v) a number of copies of the course material item previously purchased by the second user.

19. The method of claim 17 further comprising:
charging the content based on a set of information in a profile of the first user,
the information in the profile comprising at least one of (i) a geographical location of the first user, (ii) an institutional affiliation status of the first user, (iii) an enrollment status of the first user, (iv) an educational status of the first user, (v) an indication whether the first user has already purchased an item an owner of the purchased

course material item, and (v) a number of copies of the course material item previously purchased by the first user.

20. The method of claim **17**, wherein the set of content items are a first set of content items, the method further comprising:

receiving an identification of a second set of content items from the first user to add to the purchasing list of the first user;

adding the second set of content items to the purchasing list of the first user; and

receiving an authorization from the first user to share the purchasing list with a third user of the online learning system without sharing the second set of content items with the second user.

21. The method of claim **20**, wherein the third user is an administrator of a first institution affiliated with the first user, wherein the second user is an administrator of a second institution affiliated with the first user.

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